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Clinical Lecture.

EXOPHTHALMIC GOITRE.—TWO CASES OF HEMIPLEGIA—RHEUMATOID ARTHRITIS.

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Delivered at the Hospital of the University of Pennsylvania.

Gentlemen:—We have in the wards a case of exophthalmic goitre which presents the essential symptoms of this affection in such a typical manner that I am glad to have the opportunity of showing it to you. Even at a distance you will see the characteristic symptoms and those from which it derives its name. The exophthalmos is very striking and the goitre equally so. The patient was admitted to the Hospital two days ago. He is a married man, 38 years of age, and groceryman by occupation. When a child he had scarlet fever, chicken pox and mumps. When seven years of age he had mild attacks of chorea which recurred frequently until he was thirteen years old. This is an important point in his history. He states, that his arms twitched more than his legs and that the right arm twitched more than the left. His head did not shake at all. In other respects he was well and strong until the age of 32 years and for nineteen years was able to work daily. When 32 years old he had as a result of over-work, bad drinking-water during the summer, etc. an attack of diarrhœa. He had diarrhœa every alternate week for six weeks averaging five movements a day. During these six weeks, however, he worked as usual. Since then he has had frequent attacks of diarrhœa lasting from one to four weeks. For the past five years he has had a severe attack of vomiting each year. Now, every time that he has an attack of diarrhœa, it is accompanied with vomiting. From the age of 32 to 36 years, he was well, with the exception of the diarrhœa above noted. Ten years ago he had a severe cold lasting three months and with this had muscular rheumatism affecting the arms and legs.

The present illness began two and a half years ago, he thinks as the result of catching cold. He had severe pain in all his joints both large and small, but the hip and knee-joints were the worst. The joints were neither red nor swollen. He was in bed six months with this attack and during most of the time had high fever. Since then, he has had successive attacks of rheumatic troubles in the joints. He first noticed swelling of the neck after he had recovered from the attack of rheumatism two and a half years ago. He never noticed that the eyes protruded more than those of other persons and therefore we can not determine when this began.

There is one other essential symptom of exophthalmic goitre and that is frequency of the pulse. The patient's pulse at present is only 96 per minute. When I counted it in the ward a few minutes ago, it was in the neighborhood of 150. It was so frequent and so irregular that I at once ordered him fifteen drops of the tincture of digitalis. This has had the effect of bringing the pulse down to 96. He therefore has this third and characteristic symptom of exophthalmic goitre, the frequent pulse. You will observe also that the goitre is the seat of an impulse. This is quite common in this disease where the goitre is of large size but it is not peculiar to the goitre of exophthalmic goitre.

On previous occasions I have spoken to you of what is known as Graefe's sign which is put down as characteristic of exophthalmic goitre. In the last three cases that I have shown you, this sign has been absent and it therefore cannot be said to be essential. This sign as you know is a want of synchronism in the dropping of the eyelid and the ball as the latter is rotated downwards. Here the lid goes down as rapidly as the ball. Our

own experience then is that Graefe's sign is by no means constant.

The essential symptoms of this condition are exophthalmos, goitre and frequent pulse. We may, however, have other associated symptoms. These patients are often nervous and choreaic and there is certainly a close relation between chorea and exophthalmic goitre, that is, you often find that patients who have exophthalmic goitre have had chorea at some period. This is particularly so among women. The chorea sometimes continues in association with the exophthalmic goitre. At other times it disappears on the appearance of the latter affection.

There is often a cardiac murmur associated with this disease but I think that, as a rule, it may be regarded as a result of the same cause rather than a part of the symptomatology of the affection. We have in this case a soft but easily heard systolic murmur heard best at the apex but also faintly heard at the base.

I may now say a word as to the etiology of the affection. In two of three cases which we have recently seen there has been a history of rheumatism, and rheumatism is put down as one of the best recognized causes of exophthalmic goitre. There are other causes of the disease but not so well determined. One of these is simple fright, (especially in women) anxiety, unhappiness and long-continued wretchedness, are responsible for a certain number of cases of this condition. Furthermore, fatigue and overwork may lead to the same disease. Then as I have already said, chorea is liable to precede this disease, but I would not say that it is a cause, but rather that they are both the result of the same cause. Chorea is rather inexplicable in a large number of cases. It is more common in children and in females. We know very little of its pathology. It has been thought that in some of the uncontrollable, obstinate cases where the patient is in constant motion, that there was a lesion of the blood vessels of the brain, but the morbid anatomy is very imperfectly determined. In the mild cases, there is no morbid change noticeable. It would seem that the cause that brings about the chorea is more or less responsible for the exophthalmic goitre.

At a previous lecture I dwelt upon the explanation of the symptoms and it is not necessary to devote much time to this on this occasion. It is plain that there is something behind the eyes pushing them forward. The most reasonable cause is hyperæmia of the blood vessels as a result of which they become swollen and the eyes are pushed forward. This hyperæmia must be brought about by the action of the sympathetic as a result of which the tone of the blood vessels is relaxed. This most likely is of the nature of a paralysis. The same explanation would apply to the hyperæmia of the vessels of the thyroid gland. In addition to the increase in the quantity of blood there is a true hyperplasia of the connective tissue and probably of the gland tissue itself.

In the treatment of this affection one of the first indications is to remove the cause if that can be done. The debilitated condition of the patient must be relieved. He must be properly nourished and the blood renewed and for this iron and arsenic fill a useful purpose. In the next place the use of remedies to relieve the symptoms must be considered. One of the best of these is digitalis. You have seen in this case the good effect of even one dose of digitalis. Every case of exophthalmic goitre should receive more or less continuously, as indicated, digitalis. Let me here impress upon you one condition of its successful use and that is that it be intermitted from time to time. Digitalis loses its effect when long continued. I have no fear of the cumulative effect of digitalis and I am doubtful whether such a condition exists. However, to get the best results from digitalis we should suspend its administration from time to time. The dose should gradually be reduced to nothing and then stop it for a time. Strophanthus may be substituted. While this is not so reliable as digitalis, it is an excellent remedy. It must however be given in larger doses than were at first recommended. We may begin with five drops, soon increasing to ten. As these patients are often nervous and irritable, bromide of potassium is useful in connection with digitalis. Under the use of these remedies, in association with proper hygienic conditions, I have seen the prominent symptoms in the course of time disappear. While it is doubtful that the symptoms will ever disappear completely in a case like this, it is likely that they will cease to be so conspicuous and that the patient will not be annoyed. I think that in a short time I shall have the pleasure of showing him to you in a much improved condition.

TWO CASES OF HEMIPLEGIA.

About a month ago, I showed you two cases of hemiplegia and made some remarks upon the etiology of the condition. The most interesting feature was the distinction between the form in which the face is par-

alyzed on the opposite side from that of the limbs and that in which it is paralyzed on the same side. In the majority of cases, the paralysis of the face is on the same side. That was the condition in the two cases which I showed you. We therefore concluded that there was a lesion in the motor tract above the decussation of the motor fibres, but exactly what that lesion was we were not prepared to say, although we thought it probable that in both cases it was hæmorrhage. It might be a syphilitic tumor or some other morbid growth. From the suddenness with which the symptoms developed we were inclined to believe that it was of a hæmorrhagic character. I bring the two patients before you in order that you may note the progress. In both the paralysis was on the left side and about equally bad.

You will recall the treatment which we directed in the case of this colored man, 66 years of age. We put him on a purely expectant treatment, so far as drugs were concerned, with massage and electricity. There has been marked improvement in his case. He can now move his arm and leg which he could not do when admitted. He is still improving, but how much better he will get I cannot say. We conclude that the clot is being absorbed and that the pressure which it makes on the nerves of the motor tract is being lessened. In almost every case of paralysis from a clot, there is improvement in the motor symptoms if the patient lives more than a few hours. This results from contraction of the clot which always occurs within a few days. This has nothing to do with the improvement which occurs later from the absorption of the blood.

The second case is a woman, aged 44 years. She has not improved so much. We placed this woman also on massage and electricity, and in addition gave her iodide of potassium with the hope of promoting absorption of the clot. Notwithstanding we did more for her than for the man, there has been less improvement. The face is not drawn as much as it was at first and she can raise her head which she could not do before.

The obstinacy of the symptoms in a woman comparatively young, makes me think that the lesion may possibly be something other than a blood clot. The most likely one would be a gumma or syphilitic tumor. I must say, however, that there is nothing in the history pointing to specific disease, but in a woman of her social position the suspicion is warranted. In paralysis from a clot in a person of this age, we certainly should expect more improvement than has taken place. I shall therefore treat her with this idea in mind. I shall at once put her on large doses of iodide of potassium, gradually increasing until she takes one drachm three times a day.* .

RHEUMATOID ARTHRITIS.

I have here another patient whom you have also seen. It is a young girl with rheumatoid arthritis, whom Dr. Pepper showed to you two months ago. It is encouraging to be able to show a case like this, in which there has been considerable improvement, for the prognosis is apt to be unfavorable. When before you two months ago she was anæmic, and emaciated with almost no power of movement of the legs. The ankles were much swollen and the feet somewhat involved. The joints of the fingers were particularly affected. They were swollen and their movements much restricted. The skin was glossy and rather red. The fingers are still swollen, but she has less pain. She is now able to walk about the wards. What we fear in these cases is anchylosis and fixation of the joints. This can, to a great extent, be guarded against by passive motion. The pain of the treatment is apt to interfere with its employment, but we should not be influenced too much by this consideration, but insist upon passive motion and massage. The results of such treatment is often astonishing.

The patient has been taking four grains of antipyrin, and six grains of sodium salicylate three times a day. She has had also five grains of carbonate of lithium three times a day. She has taken emulsion of cod liver oil, a drachm and a half three times a day. With this, she has had massage and a passive movements. Looking at the patient and wondering whether anything more can be done for her, I think that one can not fail to be struck by her pallor, which indicates the need of iron. I think, therefore, that it would be advisable to add iron to the treatment. I should be disposed to omit the antipyrin and salicylate to determine how much of the improvement is due to them, and substitute a preparation of iron. There is nothing more suitable than Basham's mixture. I have been in the habit of employing the following formula

*Under this treatment, which with intermissions was well borne, improvement was more rapid, and at this time, August, 1891, she is able, with a little assistance, to walk in the ward.

which is satisfactory and makes a clear mixture:

℞ Tr. ferri chloridi.....f℥ss.
Potassii acetatis.....℥ij.
Elix. simp., q. s. ad.....f℥iv.
Sig. A teaspoonful two or three times a day in water.

One grain of sulphate of strychnia might be added to this mixture with advantage.

COMMUNICATIONS.

A CASE OF SKIN GRAFTING.

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In December, 1890, Mr. C., a brakeman of the Fall Brook R. R., had his hand entangled by his mitten in the bumpers of two freight cars while making a flying coupling, whereby the hand and forearm are crushed, necessitating amputation. My brother, Dr. Louis Darling, operated, excising the hand and about three-fifths of the forearm. He found the fleshy part of the flap considerably bruised, but was compelled to use it, or to amputate it above the elbow joint. This amputation, though protracting the healing, leaves a longer stump and materially facilitates the adjustment and utility of an artificial hand and forearm. As was anticipated, a portion of the flap sloughed and the muscles above the point of cutting also had suffered in the severe squeeze by the car bumpers, and suppurated beneath the skin. An incision let out the pus, and the parts under aseptic dressings and applications progressed slowly to healing. In due time all healed save one extensive corner of the stump. The skin had sloughed away and none was left wherewith to facilitate growth and covering of the end of the bone.

I had charge of the dressings after the operation, and we had concluded to excise the end of the bone, and thus get covering, but my patient was a jolly, hardy son of Erin, and, as one day I talked of grafting the open wound, he fell into rapport with the idea and submitted to the trials.

I intended first to try a piece of sheepskin, but the sheep spoken for didn't come, and when I arrived he and his friends were terribly disappointed, for they were tired of the delayed healing. Jokingly I asked for a chicken. Well, it was quickly caught, and then, of course, I was compelled to do something, and I did. I cleaned the wound, touched the surface with the point of the knife, and while slightly bleeding, I excised pieces of skin from under the wing of the chicken and applied it at three points on the raw flap. The wound was dressed and left for 24 hours. When I next saw it, the grafts had rolled up, and two had been swept off with the discharges; the one was still slightly adherent. I dressed the stump, leaving the one graft *in situ*. Two or three days afterwards, I again dressed the wound, but unfortunately the attendant had, in washing away the discharges, inadvertently removed the graft. These grafts had been cut from under the wing of a young chick, and were very delicate, too delicate, I thought, so I directed a full-grown hen to be caught and from under her wing I cut two grafts about the size of ten cent pieces, and accurately applied them to the open surface, allowing the upper one to touch the real skin, and placing the other one in the center of the raw surface, then dressed the wound antiseptically, and gave instructions to leave all as it might be until I saw it the next day. The following day I found the grafts adherent, seemingly agglutinated underneath to the wound. I cleansed the wound and dressed it antiseptically. The second day following I found the graft in the center had produced a point—a *nidus*—which appeared covered with a smooth something. The graft next the skin also appeared to be fast and the discharges much lessened around it. They were dressed as before, and on my next visit the center graft had disappeared, but a *nidus* remained. The graft close to the skin had partially gone but in its place there was a perceptible glossing over, the surface looking something like a collodion covering. The center spot, at a subsequent visit, had not developed but had entirely disappeared. The other graft, or the spot where it had been, progressed favorably and the skin—very thin at first—extended out into the raw surface. The discharge lessened and this point grew more and more in skin covering. I again grafted on other parts of the sore, fresh grafts cut from the hen, and again points formed, from which coverings spread. Thus this large raw surface, freely discharging, was covered with a new growth, the discharges lessened, and isolated scabs soon formed, which, when removed, left a *quasi* skin. The scabs formed from time to time and were removed. The surface I then dressed with vaseline and kept it lubricated until now it is entirely covered and has been covered without any discharges or scabbing for a month, the covering assuming more and

more the characteristics of skin. Once, since this skin formed, a small abrasion was produced by his shirt; this refused to heal for a time, but after repeated applications of the stick *argenti nitros* it has healed, and the entire stump is well covered. The covering is purplish, but day by day assumes more and more the appearance of the skin.

I can not say that the grafts adhered and grew, or were absorbed or discharged, but I can say that at and from the places where the grafts were placed there appeared a natural covering which remained and extended and became skin, while the places of the open surface, where the grafts were not put and around the graft's *nidus*, the surface was coverless and discharging. From day to day the *nide* could be seen extending out into raw places and the wound thus covering over.

I had before this often on large raw surfaces, or extensive ulcers, placed pieces of this or that animal's skin, cut from a tender part, and though not adhering or growing they frequently seemed to change the condition of the surface favorably, and promote the growth of covering, sometimes permanent and sometimes to break out again.

In this case there is no doubt that the grafts were of invaluable service in promoting the growth of skin on the stump.

BILATERAL FACIAL PARALYSIS, WITH REPORT OF A CASE.

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Double facial paralysis, and all forms of bilateral cranial paralysis, are comparatively rare. In an experience of nearly four years in the department for nervous diseases at the Philadelphia Polyclinic, the case which will be reported in this paper is the first of double facial palsy that has come to the service, although unilateral cases have been common. A few cases of other types of bilateral cranial paralysis have been observed, but always as parts of more general affections, as of ophthalmoplegia, bulbar paralysis, or progressive muscular degeneration. Bilateral facial paralysis, and bilateral cranial palsies in general may be peripheral, nuclear or cerebral; and the differential diagnosis of these three forms, sometimes an important practical matter, will be considered after the presentation of the case.

S. G., aged 33, was married and had had three children, and also three miscarriages, but denied any knowledge of syphilitic infection. She followed washing, ironing, and house cleaning for a living, and therefore was much exposed to wet and cold. Four years ago she had a severe attack of sciatica for about six weeks. Three months before coming to the service, after becoming thoroughly drenched in a rain, she was attacked with pains and soreness, which were at first general, but finally settled in the muscles of the chest, and remained there about two weeks, then leaving appeared in the right side of the head, and in the ear and face. Two days before this she had constant twitching of the right corner of the mouth and of the right eyelid. She had a sensation as if her head was divided in the middle from the chin to the nape of the neck. As soon as the pain commenced in the head she had sensitive lumps or "kernels" behind her ears. A week later she was completely paralyzed on the right side of the face; she was unable to close her right eye or wrinkle her brow, and her mouth was drawn to the opposite side. Two weeks after the appearance of this paralysis she began to have pain of the same character, but more intense on the left side. She now had great difficulty in masticating her food, owing to the inability to close her mouth, and was obliged to use liquids chiefly. From the first she had some blunting of taste. Her hearing was not affected until the left ear became involved, when she soon had complete deafness on this side.

When she came under observation at the Polyclinic, about a month after the first attack of paralysis, she had almost complete bilateral facial paralysis. She still complained of pain on the left side, but it was not so severe as at first, and her hearing had in a measure returned but was still much impaired on the left side. She continued to have trouble in chewing on account of the inability to close her mouth; and speech was much affected owing to difficulty in moving her lips. She could protrude the tongue and move it in all directions. Careful testing showed complete loss of taste on the anterior surface of the tongue on both sides, and this was accompanied by great dryness of the mouth. Double lagophthalmus was marked; she could not wrinkle the forehead, dilate the nostrils, raise the lips, or draw the angles of the mouth upward or downward. She was obliged to

place her hands against and around her lower jaw and cheeks in eating so as to prevent the food from falling out of her mouth; she also had some difficulty in swallowing, and was obliged to throw her head far backwards to assist in this act. She was carefully tested for touch, pain and temperature on the tongue, face, and mucous membrane of the mouth, and these senses were found to be not impaired. Smell was impaired on both sides, but was not lost. She complained of noises in the left or partially deaf ear, which she compared to the falling or crunching of ice.

The muscles would not respond to the faradic current, but on careful testing with the galvanic, reactions of degeneration were found to be present on both sides, more advanced on the left.

The patient has continued to report at the Polyclinic service for nervous diseases, up to the time of writing, a period of two months. She has made considerable improvement, much more decided on the right than on the left side. At first small blisters were applied in front of and below the ears, and she was given small doses of mercury. After a few days salicylate of sodium and gaultheria were given, under which the pain subsided, and later her internal treatment was chiefly iodide of potassium, in doses of 10 to 20 grains. Strychnia and quinine have also been used, and the galvanic current has been applied three times a week.

When last examined, the deafness and tinnitus of the left ear had entirely disappeared. She could nearly close the right eye, and the left much better than at first; the right angle of the mouth could be well drawn upward, and on the right side the lips could be elevated and depressed. She had no difficulty in swallowing and but little in chewing. In general the improvement on the right side of the face might be set down as equal to one half of the loss, while on the left side the paralysis was still very decided but improving. Reactions of degeneration were marked on both sides.

The appearance of the face in this case, as in all cases of complete bilateral facial paralysis, was very striking. It presented an immobile, mask-like look, which was entirely uninfluenced by strong emotion.

The consideration of the nature and causes of cases of this kind is of practical interest, because both prognosis and treatment must depend upon the etiology and special pathology of the case. Speaking with reference to the location of the lesion we may have three forms of bilateral as well as of unilateral facial paralysis, namely, a peripheral, a nuclear, and a supra-nuclear or cerebral form. Under peripheral would be included all cases due to gross lesions affecting the portio dura or its branches, anywhere from the superficial origin of the nerve to its terminal expansions. These lesions may therefore be intra-cranial, intramural that is, within the Fallopian aqueduct, or entirely extra-cranial. The majority of the peripheral cases reported have been due to lesions, in part at least, in the Fallopian canal. Not a few have been associated with disease of the middle ear, mastoid cells, or temporal bone. Several bilateral cases in patients suffering from double otitis have been reported. Cases have also been recorded due to intra-cranial tumors, as growths of the pons or in the floor of the skull, and also others dependent on localized basal meningitis.

The peripheral extra-cranial form of bilateral facial palsy is a rare variety of a rare affection, but Gairdner,[1] in the *Lancet*, has reported an interesting case of this kind. The case was apparently rheumatic, due to exposure. Although bilateral it was incomplete. It involved most, but not all the external branches of the portio dura; but the petrosal, the chorda tympani, the auditory, and the nerve of Jacobson, and all the branches connected with the sympathetic nerves were not involved, showing that the disease was entirely outside of the stylo-mastoid foramen. The patient had some power over the occipito-frontalis muscles, and even over some of the muscles of the ear which in health are not usually under the control of the will. The buccinators were almost completely paralyzed. Gairdner made some observations in connection with this case on the involvement of different muscles of articulation. The defect in articulation was almost entirely limited to the labials. Although formidable in appearance, this case was amenable to proper treatment, and made marked progress under the use of galvanism, exercise of the muscles, counter irritation, and iodide of potassium.

Bilateral nuclear facial paralysis as an isolated affection is extremely rare, and I have not been able to find the record of such a case. Congenital cases of bilateral paralysis of several cranial nerves, including the facial have been reported. These have been attributed to lack of development of the nuclei of various cranial nerves, and have

[1] Gairdner: *Lancet*, London, May 18, 1851.

been called by Schapringer[1] cases of "bilateral pleuroplegia." Such nuclear cases are not always congenital, but sometimes come on in progressive degenerative diseases which invade both the cranial and various spinal centres. Cases, for instance, have been reported associated with progressive muscular atrophy. The ordinary type of glosso-labio-pharyngeal paralysis, eventually becomes bilateral, but does not usually present at an early period striking bilateral phenomena. Cases of complete double oculo-motor paralysis, and of ophthalmoplegia both externa and interna, have been reported in considerable numbers, and in some of these spinal centres have been involved, although the cranial nuclei between the oculo-motor and cervical regions have escaped. Mills[2] has reported such a case of complete double oculo-motor paralysis associated with which was advanced paralysis and atrophy of both upper extremities.

The third form of double facial paralysis, the supra-nuclear or cerebral, is that which arises from double lesions situated above the nuclei in the pons and medulla oblongata, that is, in the facial centres of the cerebral cortex, in the great ganglia, or in the facial tracts connecting the cerebral centres with the cranial nuclei. Two lesions of considerable size must be present in similar locations one on each side of the brain, and this occurrence is not likely, but cases have been reported.

This case without doubt, belongs to the class of peripheral facial palsies, and the lesions are in part, at least, situated within the Fallopian aqueduct.

A peripheral facial paralysis, unilateral or bilateral, usually has a more or less acute onset, and a definite traceable cause. In the case here reported paralysis was preceded by what appears to have been an attack of diffuse muscular rheumatism, without any articular trouble. It is not impossible that syphilis may have been a factor in the case, but a specific history could not be obtained. The paralysis appeared upon the right side of the face, much as cases of rheumatic or syphilitic facial paralysis usually originate; the left sided paralysis followed the right within two weeks, and both presented similar characteristics, differing only in extent. That hearing on one side was lost and on the other retained, was in favor of peripheral as contrasted with nuclear disease, as the latter is usually uniformly bilateral. In favor of peripheral disease was also the occurrence of paralysis in the distribution of those nerves which are in contact with the portio dura, or form communications between it and other nerves, in other words, the chorda tympani, the petrosal, and the auditory. In a cerebral case these nerves are not involved, and in nuclear disease only when the lesion is extensive or multiple, including other centres than the facial.

A good practical point of distinction between a peripheral and a cerebral facial paralysis, especially when unilateral, is the completeness of the paralysis in the former. In a cerebral case the paralysis which remains prominent is usually of the muscles which are supplied by the branches of the lower part of the face; the frontal and orbiculo-palpebral muscles usually recover so fully that the palsy does not attract attention although a minute study of the movements of the muscles will show some weakness. Even in a double facial paralysis this distinction may be of some value, but probably, as in a case of double cerebral lesion, the psycho-motor centres or tracts for the face are destroyed on both sides, and one side is not left to act for both, some paralysis of all the muscles of the face will be present in the upper as well as the lower distribution of the portio dura.

The completeness of the paralysis—and the involvement of the upper as well as the lower fibres of the facial—is not against nuclear disease, but complete nuclear paralysis comes on late, after long-continued degenerative processes, and not suddenly or rapidly as in peripheral cases. Nuclear paralysis, which is usually bilateral—of the facial, abducens, oculo-motor, or other type—as a rule, if not congenital, comes on insidiously, the muscles gradually weakening and wasting, and commonly without a preceding history of rheumatism, injury, ear disease, tuberculosis, or other cause of gross lesion. As already stated, both sides are likely to be attacked uniformly, although this is not always the case. It is rare, but not unknown, to have nuclear disease confined to the cell-cluster connected with one set of nerves; it is especially rare to have the facial nuclei alone attacked.

In cases of extensive peripheral neuritis or peri-neuritis—the reflexes are abated or abolished, and in this patient the palpebral reflexes were diminished, and the muscles of the face and the uvula and soft palate were irresponsive. These tests would help

[1] Schapringer: *Medical News*, March 1, 1891.

[2] Mills: Trans. College of Physicians, Philada. Third Series, Vol. vi, 1883, p. 433.

to separate the case from both nuclear and central facial paralysis. In cerebral cases the reflexes are unaffected; in nuclear cases they may be increased until the disease has nearly destroyed the facial nucleus, or the curious phenomenon known as crossed reflex action may be present. With reference to this, Erb [1] speaks as follows: "Benedict has laid great stress upon the occurrence of unusual, and especially upon decussated reflex actions, as a means of diagnosticating the seat of the disease in the neighborhood of the facial nucleus; but reliance is only to be placed upon them when all precautions have been taken, especially to avoid diffusion of the current when electrical irritation is employed. If this be done, we are justified in admitting the presence of a disease of the gray substance in the neighborhood of the facial nucleus." Both the direct and the crossed reflex action were absent in this case.

The electrical examination is always of importance, and may at once settle the question of diagnosis, as between the peripheral, the nuclear, and the cerebral form. Most cases of peripheral facial paralysis give typical degeneration reactions. In the majority the paralysis is either complete or at least complete so far as the extra-Fallopian branches are concerned, and in these the nerve being completely compressed, all the changes, modal and serial, of typical reaction of degeneration will be present. In a few light forms, as Erb and de Watteville have pointed out, the reactions to both currents remain nearly or quite normal, and in a medium or middle form of the affection partial degeneration reaction may be present. These, however, are not common, and, as a rule, the presence of a partial degeneration reaction would point to a nuclear disease, and a normal electrical response to a cerebral lesion. Erb and de Watteville have shown that in the chronic degenerative diseases such as amyotrophic lateral sclerosis, progressive muscular atrophy, bulbar paralysis, and the more or less isolated nuclear affections, the partial degeneration reaction is the rule. The modal and serial changes in the present case indicated true peripheral disease.

Supra-nuclear facial paralysis, that is facial paralysis from disease of the cortex, the ganglia, or the cerebral tracts, would be most likely to be due to multiple lesions, as tumors, abscesses, hæmorrhages, or embolisms, and would therefore probably have the general symptoms of these affections. Occasionally such cases originate from injuries to the head causing fracture or hæmorrhage on both sides of the head, or fracture on one side and hæmorrhage on the other. After a study of the history and general symptoms, and the special symptoms as detailed, the diagnosis would be completed by remembering that in cerebral cases all degeneration reactions are absent.

The exact site and extent of the lesion on each side in such a case, has some bearing on the prognosis and treatment. The lesions on both sides have undoubtedly invaded the Fallopian aqueduct. With reference to such lesions, Althaus [2] has divided this canal into three parts, 1, a first or external section, which is below the origin of chorda tympani; 2, a second or middle section, which includes the chorda tympani and the stapedian nerve, and 3, a third or internal section, which embraces the geniculate ganglion, where the large petrosal nerve is given off, and also near at hand the small and external petrosal. In addition to the nearly complete paralysis of all the muscles supplied by both facial nerves after their exit from the stylo-mastoid foramen, the patient had similar, but not exactly identical symptoms. She had complete abolition of taste on the anterior extremity and sides of the tongue, showing that the lesion on each side involved the second or middle section wherein runs the chorda tympani. The third or inner division of the canal was also probably reached on both sides. The uvula was not deflected, but the velum palati drooped on both sides, and the palate did not respond well to electrical or other excitation. The uvula did not deflect probably because the paralysis was on both sides. One symptom, deafness, indicated a more extensive lesion on the left side than on the right. This deafness, which improved, was associated with decided tinnitus. The most reasonable explanation for its presence is that the inflammation of the facial nerve and its sheath extended inwards on this side sufficiently far to involve the auditory nerve by contiguous inflammation or by pressure. The Fallopian aqueduct begins at the bottom of the short canal which leads inward from the internal auditory meatus, and in this canal the auditory and facial nerves are in company, so that a purulent or other inflammation extending backward along the facial might reach and involve the auditory. The patient had not on either side that hyper-sensitiveness of hearing which sometimes indicates paralysis of the nerve to the

[1] Erb: Ziemssee's Cycl. Pract Med. Am. ed., Vol. xi, p. 501.

[2] Althaus; Brain, vol. ii, 1879, p. 24.

stapedius, but this is generally absent or obscure when the lesion extends to all the sections of the Fallopian aqueduct.

Facial paralysis has afforded some interesting facts in connection with certain physiological problems. The anatomical relations and functions of the chorda tympani nerve have frequently been a subject of discussion, and cases of double facial paralysis in which by close study, the exact sites of the lesion has been fixed have assisted the final decision with reference to this nerve. In two papers by McDonnell [1] and Nixon, [2] which record interesting cases of double facial paralysis, the physiology of taste and the distribution of the chorda tympani have been discussed in connection with the phenomena presented.

The nerve supply to the tongue includes the trunks or branches of the hypo-glossal, the lingual or gustatory, which is a branch of the fifth, the chorda tympani, and the glosso-pharyngeal nerves. One question which has proved a fruitful subject of investigation is as to the measure in which certain of these nerves are concerned with taste. The hypo-glossal nerve is purely motor, but at a certain part of its course it communicates with the gustatory nerve. The glosso-pharyngeal nerve is a special nerve of taste to the tongue, but it is not distributed to all parts of this organ. The chorda tympani nerve is undoubtedly distributed to the tip of the tongue, but owing to its meandering course and complicated relations it has been difficult to decide as to its origin, its independence, or if not independent, of which great nerve it is a part.

In the present case the sense of taste was carefully tested, and was found to be totally abolished on the anterior extremity and sides of the tongue. She complained at first that everything she put into her mouth tasted like tallow; later the taste of articles improved, but at the time of the last examination, after a lapse of two months, taste was completely abolished on the distribution of the chorda tympani on the tongue.

As it is important to have a clear and precise method of studying the impaired functions in a case of this kind, it might be well to give the methods which were employed in testing for touch, temperature and taste, and for the secretion of saliva,—which were the same as those described in McDonnell's paper. The tongue was touched lightly with the finger, a feather, a camel's hair brush, and other light objects, and was tested with the double points of the æsthesiometer, the patient correctly and readily recognizing the impressions. The temperature was tested by touching the tongue with cups filled with water slightly differing in temperature; with her eyes closed the patient could at once distinguish a difference of only a few degrees. Solutions of sugar, citric acid, salt and quinine were made in gum mucilage, and "sweet" "sour," "bitter," and "cannot tell," were written on a slip of paper and the patient was directed after the solutions had been applied to the tongue to answer before withdrawing the tongue into the mouth. She could not perceive the electrical taste when the poles were applied to the tip of the tongue. The effect of testing for the secretion of saliva can be best described in the words of McDonnell in recording the experiments made upon his patient and upon a healthy individual, as the results were the same: "The secretion of saliva excited by the application of sapid substances to the forepart of the tongue was in abeyance. The comparative observations made on this point were very striking. The patient and one of the students were placed sitting with their mouths open and their tongues raised to the roof of their mouths, so that one could see in beneath the tongue within the incisor teeth; a camel's hair brush dipped in lemon juice was then passed over the tip and edges of the tongue; in the healthy individual in less than half a minute, the hollow beneath the tongue became filled with saliva, which dribbled over the lip, while in the patient no saliva could be seen welling up."

So far as the determinations with regard to taste in this patient were concerned, they were simply in confirmation of the facts which have been noted in the majority of cases both unilateral and bilateral in which the lesion reached the middle portion of the Fallopian aqueduct. No positive light is thrown by such cases on the question of the origin of the chorda tympani, either from the facial, glosso-pharyngeal or fifth nerve. They show, however, that this nerve is undoubtedly in contact with the facial in the canal.

One view with reference to the chorda tympani nerve which has much in its favor is that which has been held by Scarpa and others, that it is a distinct cranial nerve with a separate nucleus in the floor of the fourth ventricle. Nixon holds that in accordance with general analogy it is most likely that we have only one great nerve of taste, as of sight, smell, and hearing, and this is most

[1] McDonnell: *Med. Chir. Tr.*, London, 1875, 2 s, xl, 369–375.

[2] Nixon: *Dublin Jour. Med. Sci.*, 1876, l xi, 105–112.

likely the glosso-pharyngeal. He believes that the difference in taste as determined by the anterior and posterior areas of the tongue, depends upon the dissimilarity of the structures of the two regions and the closeness of the base of the tongue to the organ of smell, and that probably the chorda tympani nerve rises from the glosso-pharyngeal, joining or communicating with the facial in its course. The glosso-pharyngeal is well known to be connected with the facial by two or three routes, as by the tympanic plexus, or by the communicating nerve between the facial and glosso-pharyngeal.

As already stated observations on cases of peripheral bilateral facial paralysis, like the one here considered, show that the nerve in its course is in contact with the facial, but threw no light on the origin of the chorda tympani. Some of the nuclear bilateral cases, however, would seem to indicate that the chorda tympani is a distinct cranial nerve with its own nucleus, or that it is a part of the glosso-pharyngeal. Harlan[1] and Keen[2] have reported a case of congenital bilateral paralysis of the 6th and 7th nerves. The absolute bilateral and congenital absence of function of the 6th and 7th nerves, without, as was the case, any involvement of the chorda tympani, according to Keen, pointed clearly to defective development of the nucleus common to the 6th and 7th nerves, and tended to confirm the assertion of Sappolini that the chorda originated from a distinct nucleus as a thirteenth cranial nerve.

Severe as a case like the one reported here is, great improvement can be hoped for from judicious treatment. Those cases in which the lesion was situated beyond the stylo-mastoid foramen offer of course a more favorable prognosis, but the double as the unilateral cases of facial paralysis even when intra-Fallopian sometimes recover and when a complete cure is not effected may greatly improve. The behavior of the nerves and muscles in reference to electricity as the case progresses affords some basis for opinion as to complete or incomplete recovery. If the faradic and galvanic reactions show no sign of improvement after several weeks the case will only make a partial recovery. The best treatment is that which has already been indicated as having been followed in the present case: At an early period leeches or blisters behind, below or in front of the ear, small doses of mercury and sudorifics; a little later, the salicylates. Iodide of potassium may also be used, particularly if the case threatens to become chronic and to assist in nerve and muscle regeneration, strychnia and galvanism will probably prove most useful.

[1]Harlan: Trans. Amer. Ophtal. Soc. 1881.

[2]Keen: Trans. Coll. Phys. Phila., Vol. vi, 3rd Series, 1883, p. 434.

ACUTE INFECTIOUS JAUNDICE.[1]

BY STANLEY M. WARD, M. D.

SCRANTON, PA.

The existence of an acute systemic affection, having the characteristics of an essential fever with its usual accompaniments, attended likewise with marked and persistent jaundice, hæmorrhages from various mucous surfaces, more or less disturbance of the nervous system and of the gastro-intestinal tract, the pathology of which seems to be a catarrhal condition of the gall ducts with enlarged liver and spleen, is evidently not generally admitted. Having recently had occasion, because of a case of jaundice under my care presenting many anomalous symptoms—to look through such complete and recent works as Pepper's *System of Medicine*, and Keating's *Cyclopœdia of Diseases of Children*, I could find nothing to enlighten me (the Annuals (Sajous) for 1889 and 1890 contained several pages beside references to Weil's disease—defined elsewhere as abortive typhus with jaundice"—). But beside these my search was unrewarded. My friend Dr. L. Wehlan, of Scranton, kindly put his library at my disposal, and I am greatly indebted to him for the copy of the *Sammlung Klinischer. Vorträgr* (September, 1890) containing the lecture of Dr. Hennig, of Königsberg, a translation of which constitutes a large part of this article. Dr. Wehlan also rendered me most efficient aid in the translating.

Case of the Author.—Fred. T., an inmate of the "Home," of this city, of healthy parentage, had not "seemed himself" for several days prior to my first visit on the morning of April 20th. He did not complain of anything particularly only of being tired. He had eaten no supper the night previous. Pulse 85, temperature 102½°, lungs and heart normal, throat within a little congested, tongue coated with a light fur, nothing known about his urine or fœcal discharges except that he was "con-

[1]Read at the July meeting of Lack. Co. (Pa.) Medical Society.

tive." No diagnosis made. Ordered a "fever mixture" and small doses of calomel. The next day the symptoms were about the same, but he was nauseated and had vomited. Appeared utterly indifferent to everything. Jaundice appeared the next day and his temperature rose to 103°. Stools "pasty" and very offensive. Bowels constipated. In a few days a severe epitaxis took place. The buccal cavity became sore, and bleeding occurred often from the raw mucous surfaces. His breath had a sour odor and was very offensive. There was some nocturnal delirium. Liver and spleen were both enlarged. Urine contained bile-pigment and small quantities of albumen. Meantime the jaundice increased, though it never became that dark, greenish hue seen in malignant cases; he bled frequently from the nose and mouth, though I cannot state positively that the blood which came from the oral cavity was not from the posterior pharynx or at least from the mucous surfaces already mentioned, rather than from the stomach. Thus for over four weeks these symptoms continued. Jaundice fever of a remittent type—but twice during this time did I find a normal temperature—ranging from 100° to 103°, hæmorrhages, anuria, obstinate constipation, pasty stools, anorexia and malaise. Gradually the fever subsided, the jaundice decreased, the stools and urine regained their normal character and appearance, his appetite returned and convalescence ensued. Early in the boy's sickness he was taken away from the others, and but one child had access to him. I may state, whether there is a connection or not I will not say, that soon after Fred's recovery I saw the other child with what seemed to be an irritation of the gastro-intestinal tract. He was sick but a few days.

Dr. Hennig's Cases.—October 16th, 1889, I saw Erwin L., a strong boy, on account of a yellow discoloration of the conjunctivæ. The mother stated that the child had not been well since the ninth; and though he had been restless, tossing himself from one side of the bed to the other, had a poor appetite, was cross and had lost flesh, these symptoms had not alarmed her until on the 11th she noticed the yellow tint of the conjunctivæ. Examination revealed the following: Jaundice of the skin and conjunctivæ, tongue coated with a dirty fur, sickening odor of the breath, no eruption, lungs and heart normal, spleen not easily mapped out, slight increase of liver dulness, pressure on abdomen not painful, tympanitic abdomen painful on pressure, no tumor, sensation and motion normal, no cerebral symptoms, bowels a trifle constipated, stools a slightly bad odor and a little blue in color, urine somewhat scanty, of a dark brown color, s. g. 1023, traces of albumen only discoverable by the metaphosphoric and citric acid tests, bile-pigment, hyaline casts, epithelium, and a little pus likewise present. Temperature 101⅘°, pulse fairly good and rhythmical, 106 to the minute. Neither itching nor yellow vision present. He can distinguish colors and sees good at all times. The boy being affected with hereditary syphilis—the last outbreak occurring during the summer of 1889—I at first sought some connection between this and his present condition, although jaundice is rarely a symptom of hereditary syphilis (Furth). However, as there was no evidence of a new outbreak, not much enlargement of the liver and no roughness of the organ, I threw syphilis out and made a diagnosis of catarrhal jaundice instituting a suitable therapy. Having obtained excellent results from Henoch's prescription of HCL. acid, a suitable diet in "bilious" diseases and duodenal catarrh, I decided to use them in this case. The boy improved slowly under this treatment, sleep returned, he showed a disposition to play, and his appetite returned, nevertheless icterus of the skin and conjunctivæ continued, as did also bile-pigment, albumen and casts. Splenic dulness became more plain from day to day (no pain being complained of in that region), though not in proportion to that of the liver, (both organs being easily palpated). He bore these examinations impatiently and manifested pain where they were made. The only subjective symptom now remaining, was pain in the right hypochondrium and abdomen. On the 18th the stools were yellow, this being the first indication of an opening through the ductus choledocus. Jaundice now slowly disappeared, and on the 19th a polyuria occurred, urine sp. g. 1007. Pus and casts now disappeared and he was discharged on the 21st. Case 2.—Margaret, this boy's sister, aged 3½ years. She also had hereditary syphilis exhibiting the last symptoms during June, 1889. When brought to me, early in November, I found that she was disinclined to play, was the color of a "dried herring," had pains at the base of the brain, "bone breaking" pains in her lower limbs and tooth-ache which being worse at night caused her to sleep poorly. On the 7th, her urine was found to contain bile-pigment, pus, hyaline casts, pavement epithe-

lium, with white and red blood corpuscles, sp. g. 1021. She had icterus of the conjunctivæ and face. This little patient felt very bad. She wept and sobbed loudly, complained of the itching, pain in the back of the head, in the epigastrium and in the right hypochondrium. She winked a great deal, had trouble with her vision, photophobia and was much depressed. Her tongue was heavily coated, breath sour, diarrhœa, scanty, dark-brown urine, frequent pulse, 140, temperature 102½°, the fever attended with chills. Lungs normal excepting a slight catarrh of the right lower lobe, cardial dulness normal. The heart sounds could be heard distinctly alternately with the sounds from the large blood vessels. Liver dulness extended a finger's breadth below the edge of the ribs. Palpation of the organ was very difficult. It and the spleen were smooth. The slightest pressure on the tympanitic belly evoked screams of pain. Sensation and motion appeared to be normal. In this case also a diagnosis of catarrhal jaundice was made and a similar line of treatment pursued. But a few days afterwards, or on November 9th, I saw something which caused me to view this case from another stand-point and awakened in me a great degree of interest. It was that of a third child, three years of age, living up stairs in the same house, and said to be affected in the same way, with jaundice. The families being intimate, the mother, at my request, brought her child, Elsa, to me. Her skin and conjunctivæ were yellow, tongue coated white, pulse 128, respirations 24. She complained only of weariness. She had a good appetite, regular digestion with scanty, slightly whitish stool. Her sleep was normal. As happened, according to the report of my colleague, Dr. Herbst, in his cases, that the jaundice quickly disappeared under muriatic acid, suitable diet and purgatives, so it was in this little patient, who by the 23d, was restored to health, having, with one exception, spent but one day in bed. But in the second patient the disease pursued a different course, presenting the following symptoms: A high degree of jaundice remained in the skin until the 14th, the body was the color of a lemon, discharges from the bowels were scanty, bluish-gray in color and very offensive, the urine contained a great mass of bile-pigment, albumen over 1½ per mille, (Esberch's albuminometer,) quantities of casts and pus corpuscles. There was now and then anuria. The child had a severe fever, pulse full and very fast, remaining for some time at 140. As with all the cases observed, her delirium was worse at night. During the day the child sat here and there for a short time around the house or lay on the sofa, she complained and sobbed a great deal on account of the severe pain in her head and legs and on account of the intolerable itching. She was very unhappy and enjoyed absolutely nothing. Had severe thirst at times, winked a great deal, was extremely peevish and complained of pain in her eyes. She could see during the day, had the characteristic appearance of blue-blindness; in the twilight or at night she could not take a step, being unable to see at all. Ophthalmoscopic examination negative. November 15th, it was only by quite strong palpation that I was able to demonstrate the position of the liver. On the 16th, the discharges from the bowels lost their bluish cast and became of a lightish brown. On the next day the skin around the neck changed in color, the urine lost some of its bile-pigment, the disposition of the child was not so peevish and cross, and it began to take some interest in affairs going on in its room, the pulse fell to 120, stronger. The patient's appetite improved, she complained no more of pain in her abdomen and legs, and the pain in her head was also better.

With the permeability of the bile ducts the child's recovery proceeded uninterruptedly so that on November 20th further treatment was dispensed with. Case 3. During this girl's sickness, Kurst F., brother of Elsa, presented much the same symptoms as the other three children. For the particulars of this case I am indebted to my colleague, Dr. Herbst, whose account is as follows: Kurst F., five years old, was seen on November 14th, with a yellowish hue of the conjunctivæ. There was nothing complained of which pointed to indigestion as its cause. In a short time his skin likewise became jaundiced, fever was not present. He was around the house and cheerful all the time and had fully recovered by the 27th. Case 4. On November 1st, Mr. L., father of the first-mentioned children, was sick with fever and shaking chills, severe pain in the head, anorexia, soreness in his limbs and pain in the left hypochondrium and right epidymus. The scanty urine contained no gonnocci but was concentrated, had a sp. g. of 1023, and contained a mass of bile-pigment with albumen. Examination of the lungs showed a diffuse catarrh, splenic dulness increased, while the liver could easily be felt under the edge of the ribs. With rest in bed and ice to the inflamed scrotum, and purgatives, he was better the next day and on the fifth the whole scrotum was enveloped

in a mercurial plaster, and he left his bed to go on a journey with no feeling of weight or heaviness therein. During his entire illness there was very little jaundice, though on more than one occasion bile-pigment was found in his urine. The splenic dulness was normal on the third day but the liver was slightly enlarged at the last examination. Case 5. Finally, Mrs. L. was attacked on November 14th, with a shaking chill, great lassitude, dull pain in her abdomen and trifling hæmorrhage. She believed herself two months pregnant, though she was three months advanced. Although she was put to bed, on the 18th, she had a chill, heat and burning in her abdomen, with a severe hæmorrhage, which, during the course of the following day, became so severe that fears were entertained for the safety of the fœtus. Though the womb would admit the index finger and the fœtus could be felt it could not be seized. During the night bearing down pains came on, accompanied with hæmorrhage and the fœtus was passed during the act of urinating. The secundines were removed without hæmorrhage or trouble by manual expression, late the same night. The fœtus appeared normal, had no appearance of syphilis, and was not macerated. The placenta was large showing how far pregnancy had advanced. Sections of the child showed no pathological lesion. The membranes showed fresh ecchymoses. The lying-in was normal so that the patient was around by the end of November. Mrs. L. was slightly jaundiced the whole time but the discharges from her bowels did not have the characteristic color which marks an interference with the excretion of bile.

Dr. Theodore's Case.—On Nov. 11th, 1889, Kate, ten years old, the daughter of Professor D., was taken sick with catarrhal jaundice. Added to the jaundice there was fever, 102½°. The stools never dry, a little "costive" and light in color. Urine reddish-brown. After the second day the fever tended to become higher every other night. She was free from jaundice and dismissed from treatment on the seventh day. On the day of her dismissal, her sister Joanna, aged twelve, was attacked almost as she had been, except that the jaundice was more intense and the other symptoms less severe. She was under treatment twelve days. Three days after her dismissal, viz., December 3d, her brother George, aged eight, was taken sick with anorexia, fever, heavily coated tongue and constipation. My first idea that here was also a case of catarrhal jaundice proved correct, for he was jaundiced on the next day, his fæces became an ashen-gray, his urine reddish-brown and the skin yellow. On December 12th, this patient was convalescent. December 14th Ludwig, his two and a half year old brother was taken sick with high fever, coated tongue and diarrhœa. The hope that this too was a case of jaundice was frustrated. His temperature remained high while other symptoms were lacking. That this was a case of typhoid was soon proven by the appearance of the "spots." The course of the fever was free from any complication and he had fully recovered by the end of the seventh week. On December 24th his mother who had watched and nursed him for ten days and nights was attacked with typhoid and died early in January with intestinal hæmorrhage. But jaundice had not yet finished in this family for, on January 3rd, 1890, Martin, a six year old boy was taken sick in like manner and had the characteristic yellowish discoloration. He was sick but six days, his appetite and bowels remaining normal all of the time. Finally, Elsie, aged twenty-one, was taken sick January 20th with a mild attack of jaundice. Only one child Otto, aged four, and the father escaped. The treatment of all three cases consisted in the application of the faradic current to the gall bladder. No restrictions were placed on their diet and no medicines were used.

Epidemics of jaundice have occurred for many years in Europe, certain parts of Africa, in some of the Pacific islands and in America. Woodward, *Outlines of the Chief Camp Diseases of the U. S. Army*, mentions one during the year 1861 and 1862. The earliest one I found recorded occurred in Berlin in 1699 and Dr. Hennig records others as follows: Berlin, 1702, 1878; Paris, 1741, 1760, 1865, 1870, 1871 and 1872 with many more.

The cause of infectious jaundice seemed to be some agent developed outside the organism. Kelsch (Hennig) says its breeding places are marshes, earth rich in organic matter and similar localities. Hennig gives a summary of his views thus: Infectious icterus is always an acute specific—infectious, miasmatic, but not contagious disease.

It may be sporadic, endermic or epidemic.

It occupies a close relationship to abdominal typhus and bilious typhus.

It is always a disease with a favorable prognosis.

The infectious agent is always developed outside the human body.

It does not return.

As to treatment, complications must be met as they arise. Alkaline drinks and waters are recommended, so are lemonade, nitro-muriatic acid and hydrochloric as well, externally and internally. Calomel in small doses may be cautiously exhibited. Injections of cold water are recommended and finally the faradic-current. The diet should, in my opinion in most cases be restricted.

417 Adams Ave. July 21st, 1891.

ADDENDUM.

Permit me to epitomize an article which I find quoted from the *London Medical Record*, April 1885, in the *New York Medical Abstract* for May of the same year, which originally appeared in the *Berlin klin. Woch.* Dr. Lürman reports that in Bremen there occurred an epidemic of jaundice which lasted from October 1883 to April 1884. The epidemic was limited to between 1200 and 1500 ship-builders all employed by the same establishment. With the exception of being together during working hours they were separated. The soil was sandy, no extensive repairs had recently been made in any of the buildings, the water being repeatedly examined was found pure, no phosphorus was used around the building or in any connection with the men's work and no history of any former epidemic existed. Late in October 1883 the first case of jaundice presented itself, during November there were 33 cases, in December 137 more and to April 1884, 191 were recorded, though there were many that escaped observation. Masters, clerks and laborers were attacked indifferently. The attack began with a gastric or a gastro-intestinal catarrh which lasted a week or so when jaundice came on, "the symptoms were epigastric oppression and fulness, anorexia, vomiting, faintness, &c." Constipation generally present. "Yellow vision only occurred in a few cases." "Physical examination showed a prominent and tender epigastrium." There was no hepatic enlargement "nor was the gall bladder ever felt as a tumor. The whole process was a febrile; the pulse was often retarded," the fæces were but little changed from the normal. There was no albuminuria nor bile-acids but the "coloring matters were easily shown by Gmelin's test." Cerebral symptoms, general dropsy with anuria (cholæmia) occurred but once. There were no deaths. No cause can be assigned for this epidemic. "A neighboring factory of 600 persons entirely escaped." Bad or defective diet and impure water seem excluded as causes as in the one case the wives and children of the men were not attacked and in the other most of the men seldom drank of it, bringing coffee with them. "A curious connection," it is stated, was found to exist between the occurrence of the epidemic and the revaccination of the men. Out of 540 men in one lot revaccinated in August, 141 had jaundice subsequently, out of 466 in another lot 35 had it and of 283 in still another lot 14 were affected. Afterwards 50 more were revaccinated and but one was jaundiced. Another singular fact is that of 500 persons taken on afterward not one of whom was vaccinated not one was affected and of 87 persons revaccinated with other lymph and by another surgeon not one was attacked.

Dr. Lürman arrives at the following conclusion: The jaundice was evidently infectious, the "virus was strictly limited both as to time and place with a very long incubation period of from two to eight months and was casually connected with the revaccination in some way or other."

Society Reports.

PROCEEDINGS OF SECTION III OF THE SEVENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY. AUGUST 10 TO 17, 1891.

THE RELATIONS OF THE DISEASES OF ANIMALS TO THOSE OF MAN.

COL. SIR NIGEL KINGSCOTE, K. C. B., PRESIDENT.

PRESIDENTIAL ADDRESS.

The President said: My first duty, in taking the chair of this very important and interesting Section of the first meeting of the International Congress of Hygiene held in the United Kingdom is to offer you all, on behalf of the Organizing Committee and the Council of the Section, a cordial welcome to our meetings, and to express to you our sincere thanks for your presence and co-operation in the work that is before us. The subjects that we shall have to discuss are of the greatest and most immediate importance to all classes of the community in every country; and I think myself happy in having been honored with the presidency of the first assemblage of medical men, verterinarians and agriculturists that have ever met on

common ground to discuss questions of the profoundest interest to them all, and to the world at large.

The title of our Section is sufficiently indicative of its scope and object. The relations of the diseases of animals to those of man have been the subject of more or less vague speculation by observers from an early period of the world's history; but it is only of late years that such relations have been systematically and scientifically studied. It would be in the highest degree inappropriate for me—who owe my position here to the accident of being somewhat intimately associated with the business management of two important institutions, which devote much of their energies to the study of animal life and animal diseases—to attempt to summarize the stages of development of this great question, or to pass in review the various diseases which have shown to be intercommunicable between men and animals. As to some of these—as, for instance, rabies and anthrax—the evidence appears absolutely conclusive. A few others are, perhaps, still within the range of speculation, or at least can hardly claim to have been proved to demonstration. On all these diseases and disorders, and the consequences which they involve, we are fortunate in having some of the highest living authorities here to instruct us, and I shall not abuse your good nature by standing between you and the study of their researches and experience.

There can be no doubt that the anatomical and physiological relations between the lower animals and the human being are sufficiently close to justify the presumption that they are liable to the same class of diseases; and one important part of the subject which will be considered during the meetings of our Section is the question of susceptibility, without which it would seem that the individual ceases to be responsive to the attack of the malignant virus.

In short, as will probably appear in a very prominent form in the discussion of the papers on parasitic diseases, the whole question seems to resolve itself into the survival of the fittest, and it must be for this Congress to consider and discuss the best ways of combating the invasions of the human body by the many varieties of self-multiplying alien germs and external morbific influences which prevent the individual life from completing its normal course.

THE PREVENTION OF HYDROPHOBIA.

Dr. E. Roux, of Paris, delivered an address on the prevention of hydrophobia after infection by the bite of a rabid animal, and gave an account of the results obtained at the Pasteur Institute.

THE PASTEUR TREATMENT.

It was, he said, little more than six years since M. Pasteur has made the first inoculation in man. Since then thousands of persons bitten by mad dogs had applied for treatment at the Institute. At the last Congress of Hygiene in Vienna (1887) M. Chamberland had given an account of the results obtained by the then recent discovery of M. Pasteur. At the present day the number of persons treated was large enough to enable a judgment as to the value of the Pasteurian method to be formed. The application of antirabic inoculation to man had been rendered justifiable by the observations which M. Pasteur had made that dogs could in this way be prevented from developing the disease after inoculation. This fact, which could be easily proved by any competent experimenter, had been verified by the special commission appointed by the Government of England. Encouraged by his success with fowl cholera, anthrax, and swine plague, M. Pasteur had endeavored to obtain the virus of rabies in an attenuated form. He had been defeated in his attempts to create virus by artificial media, but he had succeeded by inoculating rabbits in the brain. After a certain series of inoculations, the disease developed itself in rabbits after an interval which could be exactly fixed. In this way it was possible to have, on any given day, the central nervous system from these animals which contained pure cultures of the rabic virus. That this was so was shown, not as in ordinary cultivations, by the character of the culture, but by the fact that the disease developed with a regular course, and because the central nervous organs did not show any obvious lesion. So completely successful had this method of maintaining virus been that the inoculations had been carried on ever since the year 1883 without interruption by a single accident.

The spinal cord from an animal thus inoculated contained a virus of high but constant virulence. If exposed in a sterilized flask containing fragments of potash at a temperature of 23° C., the cords during the procees of drying gradually lost their virulence, until after fourteen days they had completely lost it. In the treatment of persons bitten by rabid dogs this cord dried for fourteen days was first used, then the cord dried for thirteen days, then for twelve days,

and so on, going from the weaker to the stronger virus, until the cord which had only been dried for three days was employed. In this way immunity was produced. For the purposes of injection the cords were rubbed down in some sterilized bouillion which had been rendered slightly alkaline. Some difficulty was at first found in ascertaining the exact quantity which should be used for injection in man. At the first the strongest virus was that from a cord dried for five days. The immunity thus conferred was sufficient in most cases, but was not adequate in the treatment where the bites were numerous and serious. The method of treatment had been varied several times in consequence, but for several years that adopted consisted in giving at first large quantities of emulsion of cords of feeble virulence followed by the injection of more active emulsion. The actual quantity used varied from 3 cubic centimetres for the weaker virus to 1 cubic centimetre for the stronger, the quantity of dried nervous substance employed corresponding pretty nearly to a centigramme for each injection. The duration of treatment varied slightly according to the severity of the bites.

In the case of ordinary bites the following scheme was followed:—

1st day. Cord of
14 days, dose 3 cc. of emulsion
13 " " "

2nd day. Cord of
12 days, dose 3 cc. of emulsion
11 " " "

3rd day. Cord of
10 days, dose 3 cc. of emulsion
9 " " "

4th day. Cord of
8 days, dose 3 cc. of emulsion
7 " " "

5th day. Cord of
6 days, dose 2 cc. "
6 " " "

6th day. Cord of
5 days, dose 2 cc. of emulsion

7th day. Cord of
5 days, dose 2 cc. of emulsion

8th day. Cord of
4 days, dose 2 cc. of emulsion

9th day. Cord of
3 days, dose 1 cc. of emulsion

10th day. Cord of
5 days, dose 2 cc. of emulsion

11th day. Cord of
5 days, dose 2 cc. of emulsion

12th day. Cord of
4 days, dose 2 cc. of emulsion

13th day. Cord of
4 days, dose 2 cc. of emulsion

14th day. Cord of
3 days, dose 2 cc. of emulsion

15th day. Cord of
3 days, dose 2 cc. of emulsion

In bites about the head the incubation period was often very short; it was therefore necessary to act with promptitude, and to increase the number of injections in the earliest days, in order to save time. Further, the treatment was prolonged for twenty-one days, according to the following table:—

1st day—morning
Cord of 14 days, dose 3 cc. of emulsion
" 13 " " "

1st day—evening
Cord of 12 days, dose 3 cc. of emulsion
" 11 " " "

2nd day—morning
Cord of 10 days, dose 3 cc. of emulsion
" 9 " " "

2nd day—evening
Cord of 8 days, dose 3 cc. of emulsion
" 7 " " "

3rd day—morning
Cord of 6 days, dose 2 cc. of emulsion

3rd day—evening
Cord of 6 days, dose 2 cc. of emulsion

4th day
Cord of 5 days, dose 2 cc. of emulsion

5th day
Cord of 5 days, dose 2 cc. of emulsion

6th day
Cord of 4 days, dose 2 cc. of emulsion

7th day
Cord of 3 days, dose 1 cc. of emulsion

8th day
Cord of 4 days, dose 2 cc. of emulsion

9th day
Cord of 3 days, dose 1.5 cc. of emulsion

10th day
Cord of 5 days, dose 2 cc. of emulsion

11th day
Cord of 5 days, dose 2 cc. of emulsion

12th day
Cord of 4 days, dose 2 cc. of emulsion

13th day
Cord of 4 days, dose 2 cc. of emulsion

14th day
Cord of 3 days, dose 2 cc. of emulsion

15th day
Cord of 3 days, dose 2 cc. of emulsion
16th day
Cord of 5 days, dose 2 cc. of emulsion
17th day
Cord of 4 days, dose 2 cc. of emulsion
18th day
Cord of 3 days, dose 2 cc. of emulsion
19th day
Cord of 5 days, dose 2 cc. of emulsion
20th day
Cord of 4 days, dose 2 cc. of emulsion
21st day
Cord of 3 days, dose 2 cc. of emulsion

The large quantities of spinal cords of feeble virus injected during the first three days had the effect of bringing the patient quickly into a fit condition for being inoculated with the more active cord. The two schemes described above could of course be altered to suit varying circumstances; for instance in numerous and deep bites on the limbs a line of treatment was adopted intermediate between the two above named schemes. Persons treated at the Pasteur Institute were divisable into three categories. The first included those persons bitten by animals which were proved by experiment to be suffering from rabies; the second class included those persons bitten by animals recognized to be rabid by verterinary surgeons; while the third class consisted of those bitten by animals only suspected of suffering from rabies.

The following is the result of the antirabic vaccinations of each category for the five years 1886–90. The results of the present year were not stated, because sufficient time had not yet alapsed:

Classes A and B:—Treated, 7,925; deaths, 73; mortality, 0.92. Class C:—Treated, 1,540; deaths, 17; mortality, 1.1. Total.—Treated, 9,465; deaths, 90; mortality, 0.95.

It would be seen that the general mortality among these 9,465 persons was 0.95 per cent. as compared with 12 or 14 per cent., which was the mortality of persons not treated. These figures included all the cases which died after treatment: but to be absolutely just, the persons who had died a few days after the treatment ought to be excluded, for in them the disease had broken out before the preventive inoculations had had time to produce their effect. If these deductions were made, the mortality would be reduced to 0.61 per cent.

In order, however, to study more exactly the efficacy of the treatment it was desirable to exclude patients bitten by animals only suspected of being rabid, and to confine attention to classes A and B. Further, he would take out of these those patients who had been bitten on the head. The gravity of bites in this situation was well known; it produced among patients not treated a mortality of 80 per cent.; 710 persons bitten about the head had been treated at the Pasteur Institute, and 24 had died—that is to say, there had been a mortality of only 3.38 per cent. Further, it should be remembered that in this proportion of 3.38 per cent. were included those cases in which the disease broke out immediately after the inoculation had been made, and which might very properly be excluded from the list.[1] Was it possible to give a more convincing proof of the efficacy of the antirabic treatment? What one among all the methods of treatment known to medicine could claim to have fewer failures? Pasteur might therefore reply to his detractors by asking them another question: Have you anything better to propose? Among the 9,465 persons treated 1,551 were not French; 24 had died, a proportion of 1.29 per cent. The somewhat higher mortality among those patients had to be attributed to the longer period which had elapsed before they came under treatment. The number of English patients treated had been 389, and the mortality among them was 1.8 per cent. This high rate was due to the considerable number of patients who had been severely bitten, but who had only presented themselves for treatment several days after the injury. It was most important to remember that the shorter the interval the greater was the prospect of success.

The nature of the change produced in the cords by the process of drying was questionable. It was certainly due to combined action of the air and of the desiccation, for cords kept at the same temperature in a moist atmosphere of carbonic acid or hydrogen, retained their virulence for a long time. The change was probably not a true attenuation such as was observed in anthrax vaccine. It was more probable that the vitality of the rabid virus was first modified and then destroyed. Since the process of desiccation affected the various parts of the cord unequally, it was desirable always to employ rabbits of the same weight, those used being of the weight of 2 kilogrammes. M. Pasteur believed that, in addition to the living virus

[1] Nine persons had died of hydrophobia within 15 days after treatment. If this number was deducted the rate of mortality would be 2.14.

in the cords, special chemical bodies were formed by the rabid microbe, which bodies probably had some part in producing immunity. In certain cases which had been treated at the Pasteur Institute a long time after the infliction of the bites, it was thought that the earliest symptoms of hydrophobia were already developing, and in certain of these cases these symptoms, such as pain along the course of the nerves and hyperæsthesia, had disappeared under treatment. In certain cases also in dogs it appeared probable that rabies had been aborted by vaccination after inoculation. A point to which much importance ought to be attached was that during the process of preparation a cord should be kept absolutely pure and free from contamination by microbes. This could only be ascertained by inoculating with particles two days before the cords were inoculated for vaccination. By taking these precautions, the danger of producing an abscess at the point of inoculation was almost completely avoided.

Since the method of treatment was first adopted the rate of mortality had declined: thus, in 1886 it was 1.34, but in 1889 it had fallen to 0.54, and in 1890 to 0.71. It might be asked whether even this mortality might not disappear. He feared, however, that this could not be. In the first place, most of the deaths were among persons who died within a fortnight after the completion of the inoculations, that is, persons who were already developing the disease when the treatment was commenced. Another reason why success could never be absolutely complete was that the virus might remain latent in the system for months or even for years. The condition of immunity produced by the preventive inoculations might in fact disappear before the virus itself had perished, and in this way the cases of development of hydrophobia at a very late period would continue to occur.

THE PREVENTION OF RABIES IN DOGS.

Dr. George Fleming, C.B., F.R.C.V.S., said that it was now generally accepted by those who had most carefully studied the subject, that rabies was a purely contagious disease, due to a virulent principle or specific agent.

Of all the domesticated animals, the dog was certainly the one which was by far the most frequently attacked, and perpetuated the malady. In the interests of mankind, no less than in those of the domesticated animals, and particularly of the dog itself, this very alarming, most painful, and always fatal disorder should be suppressed.

The measures necessary for the extinction of the disease must be based on the fact that the dog was the chief, in fact the sole, propagator of rabies; that the contagium or infecting material was conveyed from the diseased to the healthy by means of bites (other means being so exceedingly rare that they might be left out of consideration;) and that to free a country from it, all rapid and suspected dogs should be destroyed, certain restrictions maintained for a limited period, and only dogs from other countries exempt from rabies allowed admission.

That the disease could be limited, or altogether suppressed by the enforcement of proper measures, there was an abundance of evidence to prove. Sweden, Norway, Switzerland, Baden, Prussia, Bavaria, Würtemberg, and other countries have been freed from it by such measures; while countries in which it had never been seen, such as Australia and New Zealand, were preserved from its invasion by such precautionary measures as quarantine of imported dogs, or, as in Sweden, total prohibition of importation of dogs.

That the dog was the sole propagator of the disease was well seen from recent English statistics. In 1888 and 1889, 90 and 91 per cent. of the animals reported as rabid were dogs, and in 1890 the percentage was more than 96. The animals other than dogs were infected by rabid dogs, and these infected each other.

He then proceeded to discuss the preventive measures which should be adopted, taking them in the order of importance, in the following terms:

1. *Destruction of Rabid Dogs.*—The necessity for the destruction of all rabid dogs is so self evident that it need not be further insisted upon. The disease is incurable, causes much suffering, and the affected dog is, so long as it lives, so great a danger to other creatures that its speedy destruction is imperative. Dogs which are suspected of being rabid, or of becoming so through contact with those which have been affected, must always be a source of grave apprehension and danger, and unless they can be kept under close and safe observation for a considerable time, should also be destroyed, seeing the risks incurred in allowing them to live. A suspected dog may be defined to be one that presents symptoms resembling those of rabies, or which has been in conditions that have rendered infection probable or possible.

2. *The Control of Ownerless Dogs.*—Wandering dogs are the chief agents in the propagation of rabies, for the reason that they are more exposed to contamination than those which are properly cared for, and also because rabid dogs, even when carefully guarded, seek to wander from home. In proportion as wandering dogs abound in infected countries, so is the disease prevalent. This is a well established fact. In England in 1888, of 160 rabid dogs, 64, or 40 per cent., were returned as stray ones; in 1889, of the 312 rabid dogs reported, 121, or more than 38 per cent., were evidently ownerless; while in 1890, 64 out of 129, or more than 51 per cent., were so returned. Therefore, in order to limit the propagation of rabies, all wandering dogs should be secured, and, if not claimed within a certain period, destroyed.

3. *Muzzling.*—The value of the muzzle in suppressing rabies has been demonstrated on many occasions; and in serious outbreaks of the disease its introduction has always coincided with a diminution in the number of cases and the eventual extinction of the scourge. Its use is also coincident with a decrease in the number of cases of hydrophobia occurring among people during such outbreaks and their ultimate cessation. The evidence in support of this statement is so voluminous and explicit that anyone examining it must be convinced as to the certainty of the fact. After referring to the experience of Berlin since the severe outbreak in 1852, which led to the issue of a degree that all dogs should be provided with a wire muzzle positively preventing the animal from biting, and empowering special persons appointed by the police for that purpose to seize and destroy all dogs not so muzzled, Dr. Fleming continued:

In Vienna we are informed that rabies was entirely suppressed by 18 months of stringent muzzling, but in the summer of 1886 the muzzling order was recinded and badges had to be worn on dogs' collars instead. In the following half-year there was only one case of the disease, but in the next half year rabies became epizootic and the muzzle had again to be worn, with the result that the malady soon subsided and disappeared. Consequently the muzzling order is still rigidly and most beneficially enforced in Vienna.

In Holland, before 1875, rabies were prevalent to a very serious extent; but in June of that year the use of the muzzle was ordered with the result that in the autumn the number of cases fell to 41; in the next whole year they were 55; in 1877 they were 14, in 1878 they were 4, and in 1879 they were 3.

These, and the cases which have since been reported, only occurred on or near the frontier of Belgium, in which country the muzzle is not in use though rabies is always prevalent. To such a degree, indeed, does the disease exist in Belgium that in 1889 there were brought to the Veterinary School at Brussels no fewer than 94 really rabid dogs, 49 having been admitted during the winter quarter and 45 during the summer quarter; and from January 1st to April 24th, 1890, 16 were taken there.

In the Grand Duchy of Baden, during the years 1871, 1872, 1873, 1874, and 1875, the number of cases of rabies was respectively 18, 37, 37, 50, and 43. Then the muzzle was rigorously applied, and in 1876 there were 28 cases; in 1877, 3; in 1878 4; in 1879, 2; in 1880, 2; in 1881, 2; in 1882, 3; in 1883, 2; in 1884, 2. Since that year only one case has been observed and that was a dog from Metz, where there were no proper regulations and which had been contaminated before its arrival at Baden.

In Sweden rabies was at one time a somewhat common disease, and from 8 to 10 people died annually of hydrophobia, but on muzzling being enforced and the importation of dogs prevented, rabies have been unknown for many years, and no deaths from hydrophobia have occurred since 1870.

In England the value of the muzzle has been as well exemplified as elsewhere, though its application has always been extremely partial, being only employed in towns or districts when rabies has increased to such an extent as to create alarm, and removed immediately when the disease had for the time disappeared. No effective action has at any time been taken to suppress it in England or Ireland; in the latter country it is always more or less prevalent, and ever since it was first legislated for in England it has maintained a permanent existence in the following 14 counties, namely, Chester, Derby, Essex, Hants, Kent, Lancaster, London, Middlesex, Notts, Surrey, Sussex (East), Sussex (West), Warwick, and York (W. R.) During the past year cases of rabies were reported for the first time in three counties previously free from it; these were Bucks, Norfolk, and York (E. R.;) and it was reintroduced into Leicester after an absence of two years, and into Stafford, which had been free for one year.

The extent to which rabies has prevailed in this country may be judged from the loss of human life through bites from rabid dogs.

It is stated that in England (including Wales), there have been 939 deaths from hydrophobia recorded during the past thirty-eight years, the yearly average for the first sixteen years being 8, for the next sixteen years 15, and for the remaining period, ending in 1885, 45. Thus, the mortality has steadily advanced through more than 400 per cent. On the other hand, the Prussian preventive measures have reduced deaths from hydrophobia to a remarkable degree; for while in the decade ending in 1819 there was a yearly average of 166 deaths, in a similar period ending in 1886 there was a yearly average of 4½.

The value of the muzzle in suppressing rabies, has been, perhaps, best demonstrated in London, on several occasions, and especially in 1885. In the previous years hydrophobia had increased to a very alarming extent, as has just been mentioned, in England, and no steps worthy of note had been taken to check the mortality. For London alone in that year no fewer than 27 deaths of people were reported as due to the bites of rabid dogs. A muzzling order was then enforced, and at the end of 1886 not a death was recorded. Unfortunately, the order prescribing the use of the muzzle was then rescinded, and in a few months a case of hydrophobia occurred in the south of London, soon to be followed by others, and in 1889, 10 deaths were registered. In July of that year the muzzling order was again issued and stringently carried out, and rabies and hydrophobia once more disappeared.

In other countries where rabies prevails and dogs are not muzzled, though other measures—as the dog tax, medal on the collar, leading by a leash, etc—are enacted, the malady continuously manifests itself, and numbers of people perish from hydrophobia every year. We may give Belgium and France as examples. In the latter country the monthly sanitary bulletin shows to what an extent it is prevalent, and I need only refer to the last two which I have to hand those for March and April of the present year. In March, 132 dogs and 8 cats were destroyed as rabid, besides those sacrificed as a preventive measure; while 32 persons were bitten by mad dogs, as well as cattle and pigs. In April, 151 dogs and 4 cats were destroyed because of being rabid, and a large number were killed because they had been bitten by mad dogs or were wanderers; and 47 persons were wounded by mad dogs. The reports of the Pasteur Institute show that by far the largest proportion of persons protectively inoculated are French. There can be no doubt that if the use of the muzzle were enforced generally and strictly throughout France rabies would quickly vanish from the sanitary bulletins.

Belgium has tried all the other recognized measures except the muzzle, and yet the malady is as rife and deadly as ever. A Royal Commission was recently appointed to inquire into the subject, and the report addressed to the Superior Council of Hygiene in April last states that the regulations in force are insufficient, and, while not contesting the value of Pasteur's preventive inoculations with regard to people bitten by rabid dogs, it is urged that there is something far more desirable, and that is the extinction of the disease in the canine species. For this object the Commission insists upon the immediate adoption of the muzzle.

4. *Dog Tax and Registration.*—The imposition of a dog tax and registration is necessary to limit the number of dogs and to ensure that every one has an owner, who should be held responsible for any damage it inflicts. From this measure no dog owner should be exempt. If an entire country is infected with rabies then suppressive measures should be applied to the whole area, uniformly and energetically, until the malady is perfectly extinct. If only a portion of a country is visited by it, then it is questionable whether such measures should be limited to that portion only. If it were possible to keep all the dogs it contains within its boundaries, then such a step would suffice, if a certain zone around it were established beyond which no infected animals should pass. But it would be extremely difficult, if not impossible, to establish such a barrier; and, to effectively rid a country of rabies, though only partially infected, the sanitary police measures should be applied to the whole. That such a result is possible has been proved by the experience of the countries I have named, and, from these examples and what we know of the disease, it may certainly be affirmed that rabies need only exist in a country which does not desire to get rid of it.

Dr. J. Bardach (Odessa) gave the results of the Pasteur method of treatment in the bacteriological institute of that town during four years. Between 1887 and 1890, 2,243 patients had been treated, and of these only 16 had died, giving a mortality of 0.72 per cent; and if, following the statistics of the Pasteur Institute, they collected only those that died after the treatment had been carried on for two weeks, they obtained the

following figures: 2,238 treated, 11 of which died, giving a mortality of 0.49. He gave a number of statistics of the more severe injuries of the head, etc., from which it might be gathered that in these cases the results were not so favorable, especially where the wound was such as to implicate the brain or central nervous symptom, or the tissues closely associated with them, the mortality in these cases rising as high as 1.51 per cent. Where the hands were affected it was as low as 0.69 per cent., and where the lower limbs and trunk were affected it fell to 0.61 per cent. These results, he thought, might be considered exceedingly satisfactory, and would compare favorably with any other statistics.

Dr. Hime (Bradford) said all who had studied the Pasteur method were satisfied that it was established on a scientific basis; and he gave an example in the case of a dog of his own of the efficiency of the remedy. He thought, however, that it would be an advantage, in spite of what Dr. Fleming had said, to have the name and address of the owner of a dog on its collar, as at any rate it would enable the veterinary surgeon to ascertain the district from which any dog had come, and would enable him to grapple more readily with the disease at its source. He thought that the law might be made more stringent as regards owners of dogs, and that it should be possible to proceed against them more readily than at present; the onus should be placed on the owner, and not upon the bitten person. The present system of muzzling dogs in certain areas only was radically bad, and was manifestly useless and absurd; it was not only stray dogs that required muzzles, for all dogs were liable to become rabid. It had been demonstrated by MM. Roux and Nocard that even three days before the slightest symptom of rabies showed themselves in an infected dog under careful observation, its saliva was infective, and, when inoculated, would cause rabies in other dogs and other animals; this showed how very important it was to know whence a rabid dog came, so that extra precautions might be taken throughout the area. That rabies could be entirely eradicated was indubitable, and that it was still existing among us was characteristic of our apathy. As pithily said by His Royal Highness in his opening address, "If preventable, why not prevented?" Dr. Hime asked, in conclusion, whether there were any facts available as to the question of how far the dogs of Australia, where rabies was unknown, were less susceptible to rabies than the dogs of other countries, or whether the fortunate immunity of Australian dogs was due entirely to the measures of quarantine of three months carried out there against all imported dogs?

M. Nocard (Alfort) mentioned a prophylactic treatment which was applicable to domestic animals, at least to herbivores. M. Galtier had some time ago announced that the injection of rabic virus into the veins of the sheep and the goat did not produce hydrophobia, but rather conferred immunity. He himself had quite recently made a number of experiments, by which he had been able to show (1) that the extravenous injection of rabic virus would not produce rabies in horses; (2) that if the quantity of virus injected was sufficient, these inoculated equines acquired an immunity against rabies; (3) that it was possible to protect equines inoculated by intraocular injection when there were introduced into the veins certain quantities of dilute rabid nervous material. From these experiments he thought it might be hoped that a prophylactic treatment might arise out of the labors of M. Galtier. Upon the question of the prophylaxis of canine hydrophobia, he was in principle entirely at one with Professor Fleming, and he considered that muzzling would be exceedingly useful; but it must be remembered that no muzzle would prevent a mad dog from biting. Anyone who had seen a foaming mad dog tearing at the bars of his cage would understand how useless the muzzle would be. The muzzle, however, would indicate that a dog had a place in which to live and was well looked after, and that if all others were destroyed the greater number of candidates for madness would be exterminated. Of course a leash would serve equally well, and he gave examples of how these would work. The truth was, there was no necessity for new sanitary measures for the suppression of rabies; it would be quite sufficient to determine and to apply exactly and rigorously the most simple measures that were already actually prescribed in all civilized countries.

Dr. C. R. Drysdale (London) said that, having frequently attended the inoculations at the Institute Pasteur, he could speak with the very greatest admiration of the immense care and intelligence shown in the carrying out of the treatment. As to the issues of Pasteur's plan, he considered it now clearly proved that, when only 0.92 per cent. of deaths had occurred after this treatment, as compared with probably more than 20 per

cent. in similar cases, it was an indulgence in an improper amount of scepticism to deny it any longer. Consequently, he thought it was high time that a Pasteur Institute should be formed in London, for it was not fair for English people to send over all their patients to Paris and then to abuse Pasteur and his noble-minded assistants. As to the prevention of rabies, a muzzling law could be applied in England better than any other European country because it was surrounded by the sea, and, if muzzling were attended to for a year, the disease might be stamped out of the United Kingdom, and when once stamped out it might, as in Australia and New Zealand, be kept out by means of quarantine. There was no doubt that rabies was an eminently preventable disease, and being so, it was extremely immoral in anyone to refuse to help forward such a salutary law in this and other countries as the muzzle law of Prussia.

Professor Redfern (Belfast) agreed that muzzling in certain areas only was so ridiculous that it was wonderful how it could be thought of as being likely to bring about useful results. He thought that this matter was one that should be brought officially before the Congress, and that no uncertain voice should be given by a vote of the whole Section, if necessary. They would then go to members of both Houses with their hands strengthened, and be able to place the matter in a very strong light, so that they might obtain satisfactory legislation, but he wished it to be understood that, as the matter had been brought up, a very great responsibility rested on every member of the Section, and he hoped that both publicly and privately they would do all in their power to put this question on a satisfactory basis.

Dr. Ostertag said it had been suggested that the muzzle was ineffectual because cats and wolves carried the disease as well as dogs, but that cases of this sort were rare was proved by the experience of Germany. Since the passage of the laws regulating the contagious diseases of animals rabies had become a rare disease and only occurred along the French and Russian borders. These laws provided that all mad dogs, and those suspected of rabies, or even of having bitten, were to be killed, and all dogs and cats within a radius of fifteen miles must be kept in confinement during three months each year. In Berlin all dogs wore muzzles, and a case of hydrophobia had not been reported for ten years. As a result of these laws a Pasteur Institute in Germany was unnecessary.

Sir Henry Simpson (Windsor) said that no doubt they would all agree with Dr. Fleming that muzzling was an efficient remedy. He wished to call attention to the practical carrying out of a muzzling order, and to warn the Section if they made a recommendation to the Legislature to endeavor to make some exemptions, or they were likely to recommend in vain. He would say exempt sporting dogs, because for seven or eight months in the year these were used for hunting purposes. Hunting and sporting led to the employment of many persons, many horses, and expenditure of money. If men of wealth were asked to sacrifice their hunting for a couple of years they would not do it, and the country would not sanction a measure which would result in such a loss of revenue to the trade of the country. Considering that sporting dogs were well cared for, and that their owners were true lovers of dogs, it appeared to him that they need not be muzzled, but that it should be a recommendation that they be kept in charge of competent persons, and that any deviation from health should be at once noted, and an inspection made by a properly qualified veterinary surgeon, and, if necessary, the animals kept in quarantine.

Dr. Elizabeth Blackwell begged to call attention to the suffering of dogs made to produce virus; she herself had visited the Pasteur Institute and seen a series of dogs in the various stages of induced madness.

Professor Brown said that as the head of the department which was charged with the duty of checking the progress of contagious diseases of animals, he wished to refer to some of the questions which had been dealt with in the course of the discussion. He agreed with every word which Dr. Roux had uttered as to the value of M. Pasteur's method, and with all that Dr. Fleming had urged in favor of preventive measures, but he wished to emphasize the difficulties which arose from the sentimental objections of owners of animals, who, as Dr. Roux had remarked, were quite incapable of realizing that their dogs might become mad, although they were keenly alive to the risk incurred by their neighbors' dogs, and believed in the necessity of imposing restrictions on them. He could assure the meeting that if they by a strong expression of opinion induced the Legislature to insist that all the dogs in the United Kingdom should be muzzled for a certain time, every one in his

department would be gratified; but he need hardly remark that an order to that effect emanating from the Board of Agriculture, even if they had power to pass one, would excite unusual opposition.

Professor Perroncito indicated that in the municipality of Turin they had a laboratory for the Pasteur antirabic treatment that gave exceedingly good results, as published by the director, and he also mentioned that an experimental inquiry upon the same method of treatment had been commenced in connection with such animals as oxen, horses, etc., with most encouraging results.

DEMONSTRATION OF ANIMAL PARASITES.

Professor Brown gave an exceedingly interesting demonstration of animal parasites, first treating the subject generally, and taking up the questions of symbiosis, mutualism, commensualism, and parasitism. That the subject was not quite as simple as might at first sight appear was evidenced when he stated that Van Beneden had described no fewer than 400 species of strongules. He then gave a demonstration of the developmental stages of certain of the fluke or trematodes and of the cystic worms or cestodes.

ACTINOMYCOSIS.

Professor Perroncito, after mentioning some cases of direct infection of the skin with actinomycosis, said that he should reserve the greater part of what he had to say until Friday.

PARASITES TRANSMISSIBLE FROM ANIMALS TO MAN.

Professor Ralliet (Alfort) observed that the parasites transmissible from animals to man were either vegetable or animal. The vegetable parasites included besides the bacteriaciæ or microbes and divers saprophytes that were only accidentally parastic, the fungi (*tricophyta*) which caused the several affections designated by the name of "tinea." The animal parasites might be divided into external and internal parasites.

Of the internal parasites some were common to man and animals, or, living more especially in animals, might develop accidentally in man; they were often transmitted indirectly, while others must necessarily penetrate into the human organism in order to complete their evolution, and hence their transmission was always direct (*Tænia solium, Tænia saginata.*)

Indirect transmission took place very generally through the medium of drink or food, polluted or infected by the deposition of ova or embryos.

Direct transmission was brought about by the consumption of the flesh of infected animals. In this case the parasites living in the larval state in animals attained their complete development in man (*Tænia solium, Tænia saginata, Bothriocephalusl atus, Trichina spiralis.*

Prophylaxis must be regulated by the indications furnished by the preceding data: 1. So far as concerned external parasites, man ought, as far as possible, to avoid contact with animals suffering from parasitic affections transmissible to his species; he ought to endeavor to destroy the parasites and their progeny, not only in those animals themselves but also in all spots which might have been infected. 2. Since internal parasites were introduced generally through the medium of food or drink, it was expedient only to consume these substances after a careful examination and after having purified them, were necessary, boiling filtration, or other means. 3. Certain sanitary measures might contribute effectively to the completion of the protection.

TRICHINOSIS IN THE NETHERLANDS.

Dr. B. Carsten said that the first trace of trichinosis in the Netherlands was discovered in 1883, at Jerseke, a village near Goes, in South Beveland, one of the islands forming the province of Zeeland, whence by means of the pigs kept at and the rats infesting a tannery and storage for offal, the disease spread till 140 persons in 7 different parishes on the island were affected, one succumbing. The disease, which threatened to become enzootic in this district, was stamped out, thanks to the energetic measures adopted. A royal decree was issued prohibiting the removal of pigs and pig manure from an infected district, and a special verterinary inspector was stationed temporarily in the neighborhood as supervisor; the local authorities instituted a strict search for for trichinæ, ordering that all pork before consumption should be submitted for inspection to a competent committee appointed for that purpose, that all pig yards should be overhauled, and that whenever any trace of trichinæ was found the infected swine and all vermin found in the neighborhood thereof should be killed and, together with the offal, consumed by fire. The only other appearances of trichinosis in the Netherlands were in 1888, at Leyden and Noordwyk, two places in close proximity in the province of South Holland, where prompt action stopped its

spread. Since 1889 there had been no return of the disease in the Netherlands. In March, 1888, trichinosis was included among infectious cattle diseases, and consequently all infected pork became liable to seizure and destruction by order of the local verterinary official. That trichinosis, now a thing of the past in the Netherlands, was due to the thorough organization and the persistent enforcement of precautionary measures.

SELECTED FORMULÆ

WHOOPING COUGH.

The following treatment is used very largely by certain leading specialists in diseases of children in Paris. The treatment is divided into three periods. The patient should remain in one room or in bed. The following prescription is given:

℞

Tincture of aconite Tincture of belladonna Camphorated tinct. opium	aa.....lij.

M. Sig. Two to five drops once or twice a day, according to the age of the child.

If there is no febrile movement the amount of aconite may be much decreased, and if constipation is present the opium should not be used. In the second period, or when vomiting comes on, ipecac may be given in small amounts to allay gastric irritation; and in the third period, when convalescence is established, cod-liver oil, tonics and Fowler's solution will be found of service.—*Medical News.*

ZINC SULPHYDRATE AS A DERMATIC.

Zinc sulphydrate is a white precipitate—$Zn(SH)_2$—which must be preserved under water, as it is prone to decompose in the dry state. It was employed by Barduzzi, internally as well externally, in Chronic Eczemas, Psoriasis, and Vegeto-parasitic Dermatoses, with favorable results. According to Barduzzi, the desirable action of this salt is based on the sulphur being made absorbable and its irritating properties being lessened. For its administration, he gives the following formulas:

INTERNAL.

℞

Zinc sulphydrate, washed...grammes 0.5 [gr. 7½].
Extract gentian.....*sufficient to make* 50 pills.

3–12 pills daily.

EXTERNAL.

℞

Zinc sulphydrate.....grammes 5.0 [ʒ 1¼].
Lanolin.....grammes 20.0 [ʒ 5].
Lard.....grammes 30.0 [ʒ 7½].

Make ointment.

—*Merck's Bulletin.*

FERRATED CODLIVER OIL.

C. Neuss, in the *Pharmaceutische Zeitschrift für Russland*, recommends the following process for ferrated codliver oil:

℞

Codliver oil.....parts 90.
Alcohol of 90 per cent.....parts 15.
Liquor potassæ (s. g., 1.120 to 1.130) parts 33.

Mix and saponify by the aid of heat, in a spacious vessel of iron or enameled ware, stirring continuously. Then add

℞

Liquor ferri perchloridi.....parts 27.
Water.....parts 50.

and continue the heat and agitation until the iron soap is precipitated in the shape of a brown mass. Let cool, and, after carefully decanting the aqueous liquid so far as possible, and, if necessary, evaporating all watery residue, add to the iron soap five times its volume of codliver oil, and again raise the temperature until the soap is entirely dissolved. Add codliver oil sufficient to bring the whole up to 270 parts. The product is a ferrated codliver oil containing 1 per cent. of iron, of a pleasant flavor, and of a fine Malaga brown color. It keeps well.

PRURITUS.

Dr. Brubaker recommends the use of the following preparation for pruritus:

℞

Acid. hydrocyanic. dilut.....fʒ ij.
Sodii borat.....ʒ j.
Aquæ rosæ.....fʒ viij.

M. Sig. Use as a lotion.

MERCURY FOR GLANDERS.

Gold (*Lancet*) reports two cases of glanders cured by inunctions of mercurial ointment, twice a day for a month, the patient being kept at the point of salivation. The effect on the mouth was combated with chlorate of potash gargles, and on the body suppurating spots were treated by poulticing, incisions, washing out with solutions of perchloride of mercury, and dressed with iodoform gauze.

REMEDY AGAINST CHILBLAINS.

A very effectual treatment of chilblains consists in rubbing the parts twice daily with

℞

Baume de fioraventi.....grammes 100.
Acidi hydrochlorici dil.....grammes 15.

—*Journal des Maladies Cutanées.*

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The Editor will be pleased to get medical news, but it is important that brevity and actual interest shall characterize communications intended for publication.

LEADING ARTICLE.

POPULAR HYGIENE AND CRIMINAL IGNORANCE.

In the issue of the REPORTER for September 5, 1891, we published a paragraph, quoted from the *Lancet*, which stated that the Devonshire County Council, co-operating with the National Health Society, is sending trained teachers and lecturers through Devonshire, with the view of extending among the poorer population the knowledge and means of preventing common ailments, and the selection and preparation of wholesome food. "We do not doubt," says the *Lancet*, "that good will result from this effort to educate the people. It is impossible to overestimate the mischief which now results from ignorance, but if the ordinary means of prevention of disease, and the laws of health can be made of general knowledge, a great advance will be made."

The above paragraph affords us much food for thought and, at the same time, calls forcibly to our minds the crying need for a more general knowledge of the fundamental principles of hygiene by the people at large, and the absolute criminality of an entire ignorance of or disregard of them. It is high time that the profession, as well as local Boards of Health, should be stirred up to greater activity on this matter.

The highest possible aim of the physician must be the prevention of, rather than the cure of disease, and it might be well if the Chinese method of remunerating the family physician only while he maintains health in the household were adopted in this country.

It is generally appreciated by every member of our profession, that a disregard of sanitary precautions in a single case of contagious disease occurring in childhood, may be a greater menace to life than a misplaced switch before a crowded passenger train. While ignorance on the part of the switchman would be a poor defense, yet if clearly proven, the fault of his superiors in not giving proper or adequate instructions surely only increases the criminality of their

neglect; and again, if it were clearly shown that their superiors practiced a continual disregard of public safety, would it not be time indeed for the local authorities to set about, with all speed, to see that proper instructions *were* given and their observance *enforced*?

The two cases are parallel, and need no further elucidation. In the first instance, the ignorant public can only look toward their "sanitary superiors"—their physicians—for instruction, and these failing, the local Health Boards must act with prompt decisiveness. These facts are universally granted, and utterance here may seem superfluous, while the object lesson cited may be considered more fit for school children than thinking physicians. Granted, and if so the criminality of our profession in failing to properly instruct the masses in the simplest rules of public health, is so much the greater, and the importance of the step taken by the Devonshire County Council, incidently mentioned by our English contemporary, cannot be overestimated.

It is now an indisputed fact that the infectious diseases of childhood can only be occasioned by direct infection or contagion, as their name implies, and also, that such infection and contagion are unlikely to occur if proper preventive (hygienic) means are employed. It is impossible for either the physician or the Board of Health to enforce the employment of these without the entire co-operation of the public. The prevention of these diseases, or in other words, the preservation of public health and the lessening of our death rate must devolve upon the action of the public at large.

Yet, how can we, with reason, expect an *ignorant* public to perform so important a duty? Is it not more than time, in the face of these facts, that the profession should bestir themselves to find some means of accomplishing this object?

The writer recently rode in a crowded street car in which beside many healthy children, there was one with whooping cough, another infant but barely convalescing from scarlet fever, while a consumptive sat in the corner, and coughed and expectorated on the floor of the car despite the printed notice requesting him not to do so. Yet the jostling crowd was content!

It was an undoubted case of "blissful ignorance," and yet our minds reverted forcibly, and not too kindly, to the fact that each of these person's health was probably looked after by some reputable physician.

The proper observance of hygienic principles, the isolation of cases of contagious diseases, the removal of all possible causes of infection, and above all the careful and proper instruction of the public in these matters, are duties the performance of which every member of our profession should hasten to accomplish.

Let, therefore, the action of the Devonshire Council in this matter serve as an incentive. If criminal fault there be, let not the fault rest upon our shoulders. The knowledge is ours, and ours the duty to disseminate this knowledge. Let us not, therefore, hide the light of advanced science "under a bushel."

Book Reviews.

MINOR SURGERY AND BANDAGING, INCLUDING THE TREATMENT. By Henry R. Wharton, M. D., Phila. Lea Bros. & Co., 1891. p. 497.

The author has in this work endeavored to present, in as concise a manner as possible, a description of the bandages, surgical dressings, and minor surgical procedures which are employed in the practice of surgery at the present time, together with the preparation and application of antiseptic dressings, the dressing of fractures and dislocations, and short articles upon trache, otomy, intubation of the larynx, ligation of the arteries, and amputation. The author's positions and long experience as lecturer demonstrator, and hospital surgeon enable him to write authoritatively upon all these subjects.

The book is so uniformly excellent from cover to cover, that it is difficult to particularize, but the preparation and application of antiseptic dressings is especially well written and modern, and the articles upon tracheotomy and intubation of the larynx,

are clear and practical, upon both of which operations the author is an accepted authority in the surgical world.

The work is profusely illustrated with cuts, mostly new, and taken from photographs, the illustrations of the bandages and dressings for fractures being the finest that have ever been used in any work upon the subject.

It is no exaggeration to say that it is one of the most satisfactory books published upon this subject, and one that can be unreservedly recommended to students of medicine everywhere. It will also prove useful as a work of reference for the busy practitioner.

PERISCOPE.

THERAPEUTICS.

THE ABORTIVE TREATMENT OF ERYSIPELAS.

Dr. Natale Amici's (*Gazetta Medica di Roma*) method consists in sterilizing the streptococcus of erysipelas in the shortest time possible. Infection is not always limited to the reddened portion of the skin, but is often found beyond this in the latent state, even at the distance of thirty-five to forty centimetres, as the author has been able to undoubtedly prove in erysipelas of the extremities. It is not always easy to decide whether the infection be limited to the reddened skin alone, as is especially the case when the disease is met with at its beginning, or is beyond the boundaries of the inflamed spot. In general one may suspect that the infection has overleaped the apparent limits, if from the first there be symptoms of any gravity, as high fever, headache, burning thirst, and vomiting. Besides these phenomena in such cases the apparently normal skin will be found on a pressure to be painful, which pain will be more striking if pressure be made upon the inflamed focus. In other cases isolated inflamed spots, of the size of a franc piece, will be discovered scattered here and there on the surface of the normal skin; these are also sensitive to pressure and already foci of infection. As one withdraws from the central infected and inflamed spot the cutaneous painfulness on pressure decreases gradually until where it ceases one may assume that healthy skin is reached. Hence, if one would stay the progress of the disease these outrunning points of infection must be sterilized. Therefore this method of abortive treatment consists in carefully recognizing latent infection in order to combat it as quickly as possible. Any suitable antiseptic may be used. The writer employed solutions of carbolic acid and alcohol, carbolic acid and glycerin in equal parts and finally, in those cases where this remedy is not well borne, he recommends the following:

℞ Hydrarg. chlor. corrosiv., ... 0.03 grams.
Glycerin . . . . . 30.00 "
For external use.

All these three solutions are to be applied locally by means of a small brush. This same treatment is also useful in lymphangeitis.

QUININE ALBUMINATE.

A preparation described as being a homogeneous compound of egg albumen with quinine, possessing the remarkable property of not being decomposed by the strongest alkalies, has recently been introduced by M. Tarozyi (*Union Pharm.* May, p. 196). It is claimed that the preparation is easily absorbable by the mucous membrane of the stomach and passes into the circulation, where it exercises its therapeutic properties without undergoing decomposition, under conditions in which the ordinary salts of quinine are broken up by the alkaline liquids of the system. This "albuminate of quinine" is stated to be prepared by double decomposition between sulphate of quinine and albuminate of soda, but the manner of operating is not indicated. The product is a white amorphous bitter substance, said to contain fifty-six per cent. of quinine; it is alkaline in reaction, dissolves more readily in hot water or alcohol than in cold, and more freely still in water acidulated with lactic or hydrochloric acid. It may be distinguished from other salts of quinine by treating it with water, acidulated with sulphuric acid, which forms with the quinine soluble acid sulphate, the albumen being precipitated after standing.—*Pharmaceutical Journal and Transactions.*

CARBOLIC-ACID SPRAY IN LYMPHANGEITIS.

"Dr. E. Schwartz reports two cases of very severe lymphangeitis with diffuse cellutis of the lower limbs, which he treated successfully by Verneuil's method of keeping the parts under prolonged and frequently repeated applications of carbolic spray. The following is the mode of procedure: The limb is placed on some impermeable material in

such a manner that the spray can run easily off the part; the rest of the body and the bed are protected with mackintosh. One or two spray producers, filled with a watery solution of carbolic acid from 1 to 40 to 1 to 80, are then placed at a distance of about a yard from the part to be acted on, and allowed to play on it for an hour or an hour and a half, two or three times a day. Signs of carbolic poisoning must be carefully looked for, and in any case the strength of the solution and the length and frequency of the applications must be diminished as the inflammation subsides. This treatment should be combined with free incision and with wet antiseptic dressings. The patient's strength must, of course, be supported by the proper constitutional treatment. Used in this way, M. Schwartz says the method has an excellent effect, rapidly checking and modifying serious septic processes. He compares the action of the spray to that of a prolonged antiseptic bath, and he thinks it indicated in all cases in which continued local immersion is impracticable."—*British and Colonial Druggist.*

DIURETIN AS A DIURETIC.

Dr. Robt. H. Babcock, in a paper in the *N. Y. Med. Jour.* reaches the following conclusions:

1. Diuretin (Knoll) is a diuretic of great power and promptitude, suitable to all forms of dropsy.

2. Not increasing arterial tension, it is likely to succeed where digitalis, caffeine, and their congeners fail.

3. In cases of cardiac dropsy, with great feebleness of the pulse and arrhythmia, it will strengthen and regulate, rather than depress, the heart's action.

4. It appears to cause no irritation of the stomach or kidneys.

5. It requires to be given to the extent of from ninety to one hundred and twenty grains daily, and preferably in small doses frequently repeated.

6. It is best administered either in solution in warm water or in gelatin-coated pills, since, if exposed to the air in powders, it undergoes change, with a precipitation of much of the insoluble theobromine.

FUMES OF THE BROMOHYDRATE OF AMMONIUM IN ASTHMA.

Being familiar with the favorable action of the fumes of ammonium chloride in some forms of bronchitis and naso-pharyngeal catarrh, the idea suggested itself to Dr. Maxwell to test the fumes of the bromide of ammonium in asthma (*Journal de Médecine de Paris*, May 31, 1891).

To obtain these fumes he employed bromohydric acid of a specific gravity of 1.7, and it is stated that but few inhalations are required to cause the immediate disappearance of the dyspnœa, while sometimes, he writes, by causing the inhalations to be used at the time a dyspnœic attack is threatened the asthmatic seizure has been entirely prevented. In order that the fumes should have a neutral reaction they should be passed through a wash-bottle.

PARALDEHYDE IN TETANUS.

Dr. V. E. Ignatieff (*Gazzetta Medica di Roma*) proceeding from the experience of Russmant, Nopoff and Cervello, according to whom paraldehyde acts upon the nerve centres as well as upon the peripheric nerves, the writer prescribed it in two cases of tetanus (a boy of fourteen years and a woman of twenty-nine). Chloral had already been given in large doses without result. Paraldehyde was administered by the mouth and rectum, in daily doses of 3.75 to 9.40 grammes in the former (95.68 grammes in nineteen days), and 15 grammes in the latter case (450 grammes in thirty days). Both patients recovered completely. No disagreeable secondary action of the drug was observed, which occur so frequently after the administration of chloral in large doses. Dr. Tchervinsky communicated a case of tetanus to the writer which was also successfully treated with paraldehyde. Therefore, the author warmly recommends this method of treatment. The drug not only causes the convulsions to disappear, but also at the same time diminishes the pain, quiets the patient, combats the insomnia and permits the patient to be fed, thus giving the organism the possibility of eliminating the virus produced by the pathogenic microörganism circulating in the blood.—*Jour. Nerv. Ment. Dis.*

ERUPTIONS DUE TO SALICYLATE MERCURY.

At a meeting of the Russian Syphilidological and Dermatological Society, Dr. Flitner of St. Petersburg communicated five cases, referring to syphilitic women in whom intragluteal injections of Salicylate of mercury (1½ grain ever fourth day) caused more or less intense cutaneous lesions. Drug eruptions of late having attracted consider-

able attention, the following condensed account may be of interest:—In one of the patients, aged 28, the first injection was rapidly followed by rigor and fever, with a bright confluent erythema over the flexor aspect of the upper limbs, and the whole circumference of the lower. On the next day the chest and epigastrium became involved, while over the whole affected surface there cropped out numberless vesicles, closely resembling miliaria crystallina. On the fourth day, the erythema assumed everywhere the shape of "almost regular geometrical figures," such as aces of diamonds (on the forearms), oblique crosses (on the chest), &c. On the fifth, there appeared erythematous patches on the face, abdomen, back and buttocks, while the older rash became livid, and here and there brownish, the vesicles at the same disappearing. On the eighth day, the eruption began to subside; on the twelfth, a furfuraceous desquamation set in, being especially pronounced on the limbs.

In another woman, aged 18, on the day following the first injection, the back, chest and abdomen were found studded with dark, dusky, and bluish-brown, circular and rhomboid spots, varying in size from a small pea to a large almond. A few days after the second injection, there supervened rigor and fever, headache and giddiness, accompanied by the eruption of rose and red lenticular papules over the upper and right lower extremities, most of the patches presenting on their summits two or three vesicles with a serous discharge. In the course of the subsequent eight days, fresh papules continued to come out (mainly on the right limbs), while the old ones gradually disappeared, leaving no trace. The primary pigmentary rash left some discoloration.

In a third patient, aged 26, on the day following the second injection, there was observed bright erythema (with minute vesicles) on the back, which was followed by the appearance of slightly itching, sharply circumscribed, particularly bright red patches on the limbs and buttocks. The rash disappeared on the fifteenth day.

In a fourth woman, 22 years old, on the following day after the first injection the whole body became covered with regular oval erythematous patches, the exanthem lasting only two or three days. No rash occurred after subsequent injections.

In the fifth patient, aged 20, the first injection was similarly followed by the development of erythematous patches, which, however, were limited to the lower half of the back, inner surface of the forearms, and face, the skin returning to normal condition in about six days.

In the course of discussion, Dr. Usass said that he had also seen several cases of erythema following mercurial injections. In one of his patients, the whole body turned red within six days, the integument showing areas of serous infiltration. In a fortnight a profuse desquamation ensued, the cuticle being shed in large sheets. The rash was accompanied by high fever (up to 40° C.) the patient's general state remaining rather grave for some time. Ultimately (in about four weeks), however, he made good recovery.

Dr. Stepanoff similarly adduced two cases of mercurial erythema, the rash lasting in one for two months, in the other a fortnight. In the former it disappeared spontaneously after discontinuing the treatment; in the latter it was cured by iodide of potassium.

Dr. Telistiakoff related a case of mercurial exanthum resembling erythema exudativum multiforme, and chiefly involving the forearms, chest, abdomen, and lower limbs. It re-appeared after each of the first three injections of the salicylate, lasting each time for about two and a half days. Subsequent injections did not produce any eruptions. —*Jour. Cut. Dis.*

MEDICINE.

CHRONIC INTERSTITIAL MYOCARDITIS.

After reviewing the history of this subject, MM. Bard and Philippe discuss (*Revue de Médecine*, May, 1891) its pathological anatomy, pathogeny, and etiology. Moderate hypertrophy of the heart is a constant phenomenon, with dilation of its cavities, particularly of the left ventricle. On section, the color varies according to the degeneration of the muscle. The thickness of the ventricular wall is not uniform; it is more especially thin at the apex. The interstitial change is visible to the naked eye in lines or *plaques*. The papillary muscles are particularly affected. Whenever cardiac hypertrophy is present with no valvular disease, myocarditis should be thought of. Microscopically, the patches of sclerosis are made up of bands of fibrous tissue, and the muscular elements are atrophied. If the process is rapid, cellular elements predominate. In the *plaques*, the vessels show a periarteritis; elsewhere there is no constant change found in them. The authors do not believe the disease to be of

vascular origin, for the inner coat of the vessel is healthy. In the other viscera the effects of chronic congestion are seen. Many confound this interstitial myocarditis with the sclerosis set up by vascular disease. In the senile heart like changes arise, due to progressive obliteration of the small arteries. As to atheroma affecting the large branches of the arteries of the heart, most often one of the chief trunks near its origin is involved, from which a true angina pectoris may result. Rarely a branch may be completely obliterated, giving rise to necrotic foci. This interstitial myocarditis is not due to hypertrophy the result of valvular disease, for the latter is seldom present. Nor is it the outcome of renal disease, for in purely primary forms of nephritis this diffuse interstitial myocarditis is never seen. Nor is it due to diseases of the lungs, for then the right side of the heart would be chiefly affected. It is really a primary myocarditis. The changes in the muscular fibres are degenerative, without any signs of inflammation, whereas those in the interstitial tissue are active. Thus the changes in the latter are primary. In the course of infective diseases inflammatory lesions are apt to take place in the interstitial tissue, and these may become chronic. Two sets of agents may set up this inflammatory sclerosis of the myocardium: (1) intoxications from alcohol, lead, gout, etc., and (2) infective diseases—enteric fever, diphtheria, pyæmia, eruptive fevers, syphilis, though here the pure interstitial myocarditis must be distinguished from the sclerosis due to syphilitic endarteritis and tubercle. Rheumatism, which may in any of its forms set up myocarditis, occupies as it were an intermediate position between these two classes of diseases.—*Brit. Med. Jour.*

EPILEPSY OCCASIONED BY AN IMPERFORATE HYMEN.

Dr. Somers reported in the *Lancet* an interesting case, re-capitulated in *La Revue des Sciences Medicales*. It occurred in a patient who had already suffered with epileptic attacks for three years. They had been preceded for a year by malaise, headache, anorexia, pain in the belly recurring each month. At first they occurred at intervals; afterward, toward the close they returned with increasing frequency. All the characteristics were those of ordinary epilepsy, and Somers, considering the age of the patient (twenty one years) and the absence of catamenia, at first thought it was a case of pregnancy in an epileptic, but an examination made by him detected an imperforate hymen. An incision of it permitted the escape of thick and sanious pus. Afterward the catamenia were re-established and her general condition was good. No recurrence of the attacks had taken place fourteen months thereafter.

ALBUMINURIA IN DIABETES.

The occurrence of albuminuria in diabetes has been known for a long time, but its frequency is a point authorities differ upon. Sir Alfred Garrod found it in about 10 per cent. of the cases; Von Duich in nearly 25 per cent.; Dr. R. Schmitz, of Neuenahr, in a recent paper puts it at a much higher figure. Of twelve hundred cases of diabetes in which the urine was examined as to the presence of albumen, in no fewer than 824 was it found in quantity varying from a trace to as much as 0.9 per cent. There is as much difference regarding its significance. The opinion was once current that the appearance of albumen in the urine gave to the prognosis a most grave aspect, and even now the view that the prolonged polyuria and continuous irritation of the kidneys may develop a parenchymatous nephritis is held to some extent. Frerichs doubted this, and was inclined to look upon the existence of complications such as tubercle, cardiac disease, and arterio-sclerosis as the cause. Both Frerichs and Senator regarded the occasional œdema of the ankles and face as an expression of the general exhaustion, not the result of nephritis; and the latter thought that the condition produced by diabetes re-acted upon the renal epithelium, which allowed the percolation of albumen. Schmitz does not regard albuminuria as of grave significance, provided there are no other signs of organic disease of the kidneys and no complications are present. Should nephritis be ascertained to exist, he thinks, it is most probably the result of some complication. He has seen patients live for many years who were known to have diabetes and albuminuria; one case going on for fourteen years and in good health still. Dropsy is rarely observed, and cases described as dying of urœmia are probably confounded with diabetic coma. Of 206 patients suffering from diabetes of more than two years' standing, only four had albumen absent ftom the urine. With regard to the origin of the albumen, Schmitz holds that the long continued ingestion of large quantities of albumen plays a very important part, and added to this may be vesical catarrh, which occurs readily from the decom-

position of saccharine urine.—*Berlin Klin. Wochenschr.*

THE ACTION OF ANTISEPTICS UPON THE PERITONEUM.

Delbet, Grandmaison, and Bresset (*Annales de Gynecologie et d'Obstetrique*, 1891) as a result of their united experiments and observations, arrive at the following conclusions:

1. The strong antiseptics, such as carbolic and salicylic acids, corrosive sublimate and biniodide of mercury, present more disadvantages than advantages, since they irritate a healthy peritoneum and thus favor the formations of adhesions.

2. The most useful solutions to be employed in laparotomy are one of sodium chloride (six or seven parts to one thousand), and of boric acid (three parts to one hundred).

3. Iodoform and salol exert but little action upon the peritoneum, and it is a question if they have any antiseptic effect.—*Amer. Jour. Med. Sci.*

INFLUENCE OF SEX IN EAR DISEASE.

Dr. Loewenberg, of the city of Paris, discusses the influence of sex in what he calls the "laterilization" of ear disease. After referring to the view generally held by otologists that the left ear is more liable to be attacked alone, or to be attacked first and to suffer more severely when both ears are affected, he says that he has for a long time past been struck with the fact that, while deafness is more common on the left side in men, the same does not hold good in the case of women. From statistics of 3,000 cases (not including diseases of the concha and external meatus) which have come under his own notice, he shows, in the first place, that the male sex is more subject to ear disease than the female, there having been 1,790 of the former to 1,210 of the latter. Among those in whom only one ear was affected there were 478 men and 311 women. The right ear alone was affected in 212 men and 167 women; the left alone in 266 men and 144 women. Deafness existed in both ears in 1,074 men and 737 women. Among this number the right ear was the more deaf of the two in 427 men and 340 women, the left in 647 men and 397 women. Deafness was equal on both sides in 238 men and 162 women.—*Brit. Med. Jour.*

ACUTE ŒDEMA OF THE SKIN.

Barduzzi (*Giorn. Ital. delle mal. ven. e della pelle*, 1890, No. 3) considers that there is not sufficient reason to separate acute œdema of the skin from urticaria. Of three cases of acute œdema which he relates, the third was the subject, after an acute gastralgia, of diffuse papular urticaria. After the second gastralgic attack she had acute œdema of the face and hands. In the latter condition he recognized what he considered to be an atypic urticaria œdematosa.—*Brit. Med. Jour.*

REGENERATION OF HAIRS AFTER EXTRACTION.

Giovannini *Giorn. Ital. delle mal. ven. e della pelle*, 1891, No. 1, 1891) found that usually when a hair is extracted the external root sheath is not removed, and a considerable part even of the inner root sheath remains in the follicle. The formation of new hair begins about the forty-first and seventy-second day after depilation, and takes place from the epithelial cells, which had been retained in the follicle.—*Brit. Med. Journ.*

SENSORY AND VASO-MOTOR DISTURBANCES IN CASES OF RHEUMATIC FACIAL PARALYSIS.

In the K. K. Gesellschaft der Aerzte in Wien, on 19th April, Hr. v. Frankl-Hochwart gave an account of twenty cases of facial paralysis which he had had under his observation. In ten cases there were neither sensory nor vaso-motor disturbances; in two there were both; in five there were sensory; and in three there were vaso-motor. The altered sensibility was in many cases complained of by the patients themselves, and confirmed by examination, including testing of the appreciation of heat and cold. It was never great, and sometimes involved not only the skin, but also the buccal and lingual mucous membrane. The sense of taste was in a few cases likewise diminished. The vaso-motor disturbances gave rise not only to alterations in the color of the affected side of the face, but also to raising of the temperature of the part.

These disturbances usually manifested themselves with the paralysis, but disappeared after a week or two, the paralysis persisting longer; in one case, however, in which the paralysis was of several years' standing, the loss of sensibility continued.

In explanation of such cases it is assumed that the facial nerve contains vaso-motor and sensory fibres; and, in support of this theory, cases in which herpes accompanies facial paralysis are alluded to as implying

that the nerve is supplied with trophic fibres. —*Deut. Med. Zeitung*, 30th April, 1891.

THE RISE OF TEMPERATURE IN THE EPILEPTIC ATTACK.

In his wide experience of epilepsy at the Bicetre, M. Bourneville has spent much time in the study of its effects on the temperature, and has come to the conclusion that it always raises the temperature a little at the time of the attack. In the case of single isolated fits the rise was always clearly perceptible—on an average of about 1° F., and sometimes as much as 3° F.; in a series of ten or twenty fits it was on an average larger, about 1·5° F.; and in cases of *status epilepticus* there was frequently a temperature of 105° and sometimes 108°. M. Duflocq has recently published a few cases of "partial epilepsy of subcortical origin" (*Revue de Med.*, February, 1891), in which only a few observations showed any rise of temperature, which was claimed abnormal. These have led M. Bourneville to repeat some of his previous lengthy and careful observations. Selecting sixty-seven patients in whom there were single isolated epileptic attacks, he has taken the temperature in each: (*a*) during the stertor immediately succeeding the convulsions; (*b*) a quarter of an hour later; and (*c*) two hours later. There is a uniformity in his results which is remarkable. In none of the cases is the temperature at the time of the attack as low as normal, and in none is the temperature not lower two hours later. The average (*a*) in the period of stertor is 100·5°, (*b*) a quarter of an hour later is 100°, and (*c*) two hours later is 99·3°. In nine other cases the rise of temperature culminates at (*b*) 100·5° rather than at (*a*) 99·8, but sinks at (*c*) to 99·4°. In that second class of cases in which there are series of attacks with short periods of consciousness between each, M. Bourneville's old observations are found to repeat themselves in four new cases. The temperature after the series of attacks rose on an average to 102·1°, and then fell after eighteen hours to 100·3°. In the third class, consisting of four cases of *status epilepticus* which all ended fatally, the rise of temperature was not quite regular during the three or four days that the condition lasted, but rose in all cases over 105°, and in one case touched 108·4° just before death.—*Revue de Med.*

SURGERY.

EFFECT OF QUININE ON THE HEALING OF WOUNDS.

Dr. Sokoloff has recently published in the *Lancet* some interesting observations on the effect of quinine administered to a wounded animal on the granulation and cicatrization of the wound. The experiments were conducted on rabbits. The fur was shaved from a portion of the paw, and an incision made through the skin and into the muscular tissue, the external wound being then sewn up and the whole dressed antiseptically. Subsequently microscopical observations were made on sections including the wound. Twenty-four rabbits which were experimented on in this way were treated with hydrochlorate of quinine, half a grain of which was given per diem for each kilogramme of body weight. A similar number of control rabbits were operated upon in precisely the same manner, but were not given quinine. The author gives a detailed description of the microscopical appearances observed each day for eight days in the two sets of cases. The effusion of blood was much the same in both, but there was a marked difference in the condition of the muscular tissue. In the control animals this lost its striped character, the portions in the immediate vicinity of the wound presenting the appearance of an amorphous homogeneous substance containing here and there a few muscular fibres or breaking up into separate pieces as in coagulation necrosis. Besides this, the muscular tissue gradually disappeared, leaving sheaths of sarcolemma either empty or filled with cells. In contrast to this state of things sections taken from the animals treated with quinine presented little or no sign of muscular degeneration, the fibres preserving their proper structure. With regard to the cellular elements in the control animals, two forms were found in the neighborhood of the wound—a large number of multinuclear leucocytes, and a much smaller number of large round or oval cells with a single large nucleus. During this period the nuclei presented various karyokinetic figures. In animals treated with quinine there was no multinuclear cells, all being oval, with a single nucleus and smaller than the corresponding cells in the control animals. The cells were, moreover, more numerous than in the control observations. In the quinine-treated animals the karyokinetic process commenced and finished

earlier than in the others, the chromatin filaments being also less numerous but thicker. Altogether there was less inflammation with quinine than without; in short, without quinine there was Zenker's degeneration, with quinine, none.

TREATMENT OF ORCHITIS BY REFRIGERATION.

In his inaugural thesis Dr. De la Valle reports the results of the treatment of orchitis employed in the service of Dr. Du Castel (*Journal de Médecine*, April 10, 1891). This process consists in painting the scrotum with a camel's-hair pencil dipped in the chloride of methyl, the operation to be repeated twice daily. It is stated that immediate and considerable relief ordinarily follows the very first application, even in cases where the inflammation is violent, and where the patients hitherto have been confined to the bed. The average duration of the treatment was seven and a half days; the average time the patients remained in the Hospital eleven and a half days. This treatment is extremely simple, and does not necessitate the employment of any other medical treatment whether internally or by external application.

A HUNDRED CASES OF ENTIRE EXCISION OF THE TONGUE.

A valuable paper by Whitehead on excision of the tongue appears in the *British Medical Journal* for May 2, 1891.

In the last twenty years the writer has operated for cancer of the tongue in 139 cases. Of these 104 were complete excisions, and 25 were partial operations, the mortality in the former being 19.21 per cent., while in the total number of cases it was 14.3 per cent. When the tongue alone was excised the death-rate was 4.5 per cent., and when glands and jaw were also removed it was 77 and 57 per cent. respectively.

He has not selected his cases, and has never allowed the extent of the disease or the emaciated condition of the patient to deter him from operation when there was any prospect of either prolonging life, or of affording even but temporary relief.

The essential details of Whitehead's operation are: 1. That complete anæsthesia during the first stage of the operation, but afterward only partial insensibility, is to be maintained. 2. The mouth must be securely gagged, and kept fully open. 3. The head should be supported in such a position as will afford the best light, and at the same time favor the gravitation of blood out of the mouth rather than into the pharynx. 4. A firm ligature must be passed through the tip of the tongue for the purpose of traction. 5. The division of the reflection of mucous membrane between the tongue and jaw and the anterior pillars of the fauces. 6. Rapid separation of the anterior portion of the tongue from the floor of the mouth. 7. Securing, if possible, the lingual arteries prior to division. 8. Passing a ligature through the glosso-epiglottidean fold, before finally separating the tongue. 9. The application of a mercurial solution to the floor of the mouth, followed by painting the surface with an iodoform styptic varnish. The cutting part of the operation is done entirely with scissors.

The writer does not advocate preliminary tracheotomy, and believes that it is possible to guard against the entrance of blood into the lungs by means involving much less risk than either tracheotomy or laryngotomy. He thinks it important that the patients should be made to sit up from the first and not kept in bed. The average time of convalescence he has found, under these circumstances, to be seven days.

In regard to the predisposing and exciting causes of the disease, it was found that in 104 cases a family history of cancer could be definitely traced in but six, and in seven others it was doubtful. In sixteen instances the disease was attributed to injury; 61 of the patients were smokers, and in the majority of these the disease began on the side on which the pipe was habitually held. Irritation from teeth was the exciting cause in 33. One patient had never smoked, and had not possessed a tooth for twenty years.

As to the duration of life after the operation, information was obtained in 61 cases. Fifteen lived for one year; four two years; two three years; four five years; one six years, and one patient survived the operation for fourteen years, although 62 years old at the time it was performed.

In conclusion, Whitehead lays great stress on the importance of the removal of the disease at the earliest possible moment after its discovery.—*Univ. Med. Mag.*

SHOCK.

Dr. Hunts, in the *Med. Record*, says: In the treatment of shock we must keep constantly before us the condition of the pulse, respiration, and temperature, and our efforts to be directed toward their improvement. Warmth,

in the form of a hot bath, or of hot plates, bottles, irons, etc., applied to the chest, abdomen, and extremities, is of prime importance. Even when life seems to be extinct, as in the case of a boy whom I had trephined for a crushed skull, reaction may sometimes be brought about by wrapping the patient from head to foot in a flannel blanket wrung out of water as hot as the hands can tolerate.

Stimulants are indicated from the start and should be persisted in until reaction has begun, when they must be diminished or administered in conjunction with nourishment either by the stomach, or when this will not retain it, by the rectum. I believe that the danger of over-stimulation is genuine, not on account of any fever which may ensue, but rather lest the enfeebled heart may succumb to the excessive demand made upon it. Of all the stimulants recommeded the greatest hope is to be placed in brandy or whisky, then digitalis, and then strychnine, all to be given hypodermically or by the rectum. Brandy and whisky can be given in syringeful doses repeated very frequently, digitalis in ten-minim doses of the tincture or one-sixtieth grain of the alkaloid and strychnine in one-thirtieth or one-fifteenth grain doses, though not repeated so often.

Verneuil recommends injections of ether at times an excellent stimulant. Carbonate of ammonia is valuable and may be given subcutaneously. Morphia and atropia are of great value when restlessness of delirium is present and should never be withheld in such cases.

Artificial respiration will often prolong and sometimes restore life and should be resorted to in suitable cases. Bleeding from the external jugular has been recommeded, where that vessel is found distended with blood, with the hope of relieving the engorgment of the heart and thus stimulating it to action, but it must be remembered that the paralysis of the heart is not due to its engorgement, but that this condition is rather dependent upon the paralysis, making the operation one of doubtful expediency.

Transfusion may, possibly, be of service when there has been loss of blood, in which case a weak saline solution will be quite as efficient as blood itself.

But little can be done to relieve the excessive irritability of the stomach, except to withhold absolutely everything from it. The patient's lips may be moistened, but nothing must be swallowed, and the extreme thirst may be slightly relieved by rectal injections of milk or water. A mustard plaster applied over the stomach sometimes seems to give relief.

ON THE PRESENCE IN URINE OF A SUBSTANCE RESEMBLING SUGAR IN ITS REACTION.

Dr. Cleghorn says that during the last two years he has come across three cases in which for a short time the urine contained a substance which reduced cupric sulphate, and produced the usual re-action of sugar with liq. potassæ and picric acid. The specific gravity of the urine in these three cases varied from 1024 to 1030; in each case the breath had the peculiar odor which can be noticed when patients are taking medicine flavored with chloroform. In the first case the patient was suffering from exophthalmic goitre, aged about 27, and earned her living as a printer in a newspaper office. In her case the substance was present in the urine for a fortnight. She had been suffering from exophthalmic goitre for four months, gradually going from bad to worse. At that time she was very ill, and almost confined to bed. Soon after she began to improve, and six months later was able to resume work. He does not think treatment influenced the progress of the disease in her case. The other two cases occurred in little boys aged 3 and 5 respectively, and in both the symptoms were very much alike. They were both suffering from what seemed rather severe attacks of gastric disturbance, and in both the substance was only found in the urine for three days. They were more than usually prostrated after the attacks passed off, but in a fortnight had returned to their usual standard of health. Some cases of this nature were reported in the *British Medical Journal*, vol. i., p. 169 (1890), by Dr. Ashdown, who says this substance can only be distinguished from sugar by the fermentation test. He proposed to call the substance glycuronic acid. As Dr. Cleghorn has come across these three cases in so short a time as two years, the condition must be far from rare, and its recognition may make the prognosis more guarded in cases of supposed glycosuria with urine of a comparatively low specific gravity.—*New Zealand Med. Journ.*

GYNÆCOLOGY.

THE TREATMENT OF AMENORRHŒA BY SWEDISH MOVEMENTS.

Thure Brandt treats this affection by

Swedish movements, without massage or any local treatment whatsoever, the exercises being of the kind called "congestive" to the pelvic organs. Of these there are two varieties, the one consisting of movements performed by the patient alone, the other requiring an assistant. There are ten of the first variety, which are to be practiced once a day in regular order, a rest of five minutes being taken between each movement. The exercises are as follows:

1. Elevation of the arms, and deep respiration in a walking position. To be done five or six times.
2. Rotary movements of the feet in a semi-prone position.
3. Lateral flexion of the trunk, in standing position, feet far apart, arms uplifted.
4. Bending and unbending of the knee in a standing position.
5. Flexion of the body forward and back, standing position, feet apart, arms lifted.
6. Circular movement of thigh in an upright position.
7. Running movement without leaving the spot, knees lifted high.
8. Circular motion of the trunk in upright position, feet apart.
9. Abrupt backward motion of the trunk in a kneeling position, the knees apart.
10. No. 7 done very slowly.

The movements requiring an assistant are divided into the feebly and the strongly congestive. There are nine of the first class, consisting of motions of head and arms, flexion of leg and foot against the resistance of the assistant, percussion of back, circulatory motions of trunk, torsion of the body in the sitting and kneeling positions, elevation of the chest by the assistant, the patient lying down.

The strongly congestive movements include five of the first list in a little different order, and three new movements, viz., lateral movement of the uplifted arms by the assistant, the patient resisting, followed by action on the part of the patient, the assistant resisting; bending and straightening the knee in an upright position against the resistance of the assistant, and a circular movement of the thighs. The ideal treatment for amenorrhœa would be the execution of these movements, one after the other, without fatiguing the patient. As this is usually impossible, a judicious choice should be made, adapting the movements to the condition of the patient. Feeble and anæmic subjects should perform the easiest exercises only, and begin with a few at a time.

OBSERVATIONS ON THE CHANGES IN SIZE AND CONSISTENCE OF THE FEMALE PELVIC ORGANS.

Lindblom (*Ctrlbl. für Gyn.*, No. 3, 1891), who employs pelvic massage extensively, has observed almost constantly during the séances changes in the pelvic organs, especially in the uteri.

In the most marked cases the uterus at the beginning of the séance is small, lax, and soft; it then increases in size, grows harder, and assumes a spherical form. These changes are noticed principally in the body and supravaginal cervix. The author attributes them to changes in the blood-supply of the organs and compares them to erections. The woman, however, experiences no sensations from these changes. The author has also observed that the swollen uterus just before the menstrual period diminishes in size as soon as the blood begins to flow, and the uterus grows flaccid and soft, the decrease in size and flaccidity being in direct ratio to the abundance of the flow. The ovaries decrease in size also on the appearance of the menstrual discharge.

NOTE ON THE VALUE OF PEROXIDE OF HYDROGEN IN GYNÆCOLOGY.

The value of peroxide of hydrogen as a detergent and purifier has long been known, and when applied to dressing foul ulcers (syphilitic or otherwise) has given good results. Some time since, Dr. Alexander Duke, while treating a case of sepsis in which pus was freely discharging from abraded surface on vaginal wall, thought he would try the effect of peroxide. He had previously had the part twice daily syringed with weak solutions of carbolic acid, iodine, sanitas, and Condy's fluid without much effect. He found the solution of peroxide act as a charm in checking the secretion gradually, cleansing and healing the abraded surface, and producing no irritation; and he ventures to suggest it as a suitable application, more especially to the female genital tract. One teaspoonful added to half a pint of warm water gradually increased in strength will, he feels sure, be found a valuable addition to the many antiseptics used in such cases. He also suggests that in all cases where there are symptoms denoting septic absorption during the lying-in period a close examination of the vaginal walls and cervix uteri for tear or abrasion should be made, and, when discovered, the part thor-

oughly cleansed and cauterized with strong carbolic acid. He believes he can attribute the recovery of more than one patient, whom he had been called to see in consultation, to the adoption of this plan. But he much prefers the prevention of such accident by flushing the uterus with hot water directly after labor, examining at the same time for any tear or injury, and cauterizing or suturing the surface then and there.—*Lancet.*

CLOSURE OF CERVICO-VESICO-VAGINAL FISTULA FROM THE SIDE OF THE BLADDER.

Baumm (*Archiv. für Gynäkoligie*, Bd. xxxix. Heft 3) reports an interesting case in which he followed Trendelenburg's suggestion to close complicated fistulæ by exposing and incising the bladder, as in epicystotomy, and suturing the edges of the fistula from within. The patient had had extensive sloughing after a tedious labor, as a result of which there was a large cervico-vesical fistula with extensive cicatrization involving the entire vaginal fornix, so that it was impossible to expect a successful result from a plastic operation. The patient was placed in Trendelenburg's posture. A median incision was made just above the symphysis, the pre-vesical space was exposed, and the bladder was opened by a transverse incision two inches and a half in extent, through which the interior of the viscus could be thoroughly inspected. The mouths of the ureters were surrounded by the cicatricial tissue at the edge of the fistula, but were located by passing a probe into them. The borders of the fistula were denuded, an assistant aiding by making pressure upon them *per vaginam*. Eight silk sutures (having a needle on each end) were passed down into the vagina, where they were drawn through by the left hand of the operator, and subsequently tied with the aid of a Simon's speculum. The upper wound in the bladder was closed with a double row of sutures, muscular and sero-serous, a T-shaped drainage-tube being inserted. After tamponing the pre-vesical space with iodoform gauze, the abdominal wound was closed. The patient had a tedious convalescence, and six weeks after the operation there remained a large fistula at the site of the abdominal wound which never closed. It was necessary to perform a slight secondary operation in order to completely close a small cervico-vesical fistula.—*Amer. Jour. Med. Sci.*

OBSTETRICS.

A CASE OF INTRA-UTERINE FRACTURE OF BOTH THIGHS—TREATMENT.

Dr. P. J. Farnsworth, reports in the *Annals of Gynæcology and Pædiatrics* an interesting case of this character: Mrs. S., aged 25 years, in fair health and of good constitution, was taken with her first labor August 19, at 4 A. M. Dr. G. A. Smith was called. Labor progressed favorably until 7 A. M., when dilatation had taken place sufficiently for examination. At first he was unable to make out the presentation, but a severe pain coming on the membrane ruptured, and he found it was the breech. Soon, in the midst of a strong pain, a distinct crackling sound was heard, like the breaking of a large twig, and in a few seconds it was repeated. The noise was easily heard by all in the room. Mrs. S. was very much frightened, became faint, and all pain ceased. I was then called in; an hour had elapsed and no symptoms of pain. Made an examination and found the breech engaged with the sacrum to the left acetabulum. After administering some stimulants and assuring the patient that everything was all right, the pains returned and proceeded regularly but slowly. Soon the body was born, and with a little delay the head was extracted. There was only a flutter of the heart and no respiration. Chloroform had been administered pretty freely during the last stages. The cord was tied and means used to resuscitate the child, which after some time was accomplished.

The child was a female of fair size, but thin and wrinkled as if it had been plump and then had fallen away. It weighed nearly seven pounds. On examination we found both thighs fractured, the right one in two places near the lower third, the left one above the upper third. The child was washed and laid on a pillow until afternoon, when we found her breathing well and making an attempt to nurse. We cut three pieces of paste-board from a paper-box cover; two as long as the legs from the foot to the perinæum; the third a little wider, reaching well up to the body. Wrapping the extended legs in several folds of cotton we put the roller bandage around them pretty firmly, carrying it around the abdomen so as to catch the upper ends of the outside splints. The dressing was found very loose after two days and was removed. We now found that the muscles resisted extension with no little force, which was overcome by ele-

vating the legs at a right angle with the body. Again applying the folds of cotton, we put on a plaster-of-Paris bandage, covering the legs with several thicknesses and placing them against a cushion to keep them up.

The mother had a full supply of milk, and the babe grew rapidly, apparently paying little attention to its unusual condition, being less fretful than many other children of that age generally are. On the 26th we found the feet showing some signs of constriction and removed the dressing. The shrunken, flabby look had given place to a full plump appearance, the bones were united, with very decided callus. We brought the limbs down carefully, made extension and then reapplied the plaster bandages, putting them again in the upright position, soles toward the ceiling. At the end of three days there was some irritation around the top of the dressing and the circulation a little languid in the feet. The bandages were taken off, the union was firm, with large callus. There was still muscular resistance to extension. We procured a thin board as long as the child, cut it into a fork at the lower part, padded it well and laid the child on it, drawing down the legs and bandaging them to it from toes to hips, and a wide band around the abdomen and stomach. It resembled an Indian papoose in full dress. This was done partly to get full and equal extension of the limbs, and partly for the convenience of the mother, whose circumstances rendered it necessary to make a journey of fifty or sixty miles on the river. The mother and nurse are willing to testify as to the ease and safety of this aboriginal means of dressing a baby when a journey is required.

On their return on the twelfth day we removed the last dressing, and found firm union with considerable lateral curvature. We next applied a firm felt splint, curved partly round the legs, but not covering them. These we fastened on with a roller bandage with considerable force, removing them each day and applying compresses of cotton where we wished to remedy a crook. On the eighteenth or twentieth day we removed all the dressings and allowed the nurse to put on "baby's long clothes." To all appearance the limbs were of a length and without deformity, except the rings of callus at the points of injury. Motion in all the joints perfect and of fair proportions. At this writing, five months from birth, no signs of injury can be detected,—a plump, well-formed baby as can be found anywhere.

I have given this case with more detail, inasmuch as we could find no mention of any treatment for such a case, and only mention that intra-uterine fracture did sometimes take place. We notice how quickly infantile lesions are repaired, also how easily deformities may be corrected, and observe in passing that many bow-legged people may have been made so by thick diapers and faulty dressing during the first weeks of life.

A NEW METHOD OF INDUCING PREMATURE LABOR.

Dr. Schrader, of Hamburg, has published a new method of inducing premature labor based on his observations that cold is a greater excitant of the nervous, and consequently also of the muscular system than warmth. Continuous irrigation at the temperature of 45° Fahrenheit is impracticable on account of the pain it causes, but a cold douche alternating with a warm one can be borne. Dr. Schrader connects a vaginal glass tube by means of a T-shaped piece and the necessary india-rubber tubes to two irrigators, one of which contains the cold and the other the warm water. By allowing now one instrument and now the other to work, cold or warm water may be sent through the vaginal tube into the vagina. Two people are required—the one to fill the irrigators, the other to work the douche. For each sitting about twenty-four litres of cold and half the quantity of warm water at 112° Fahrenheit are required, and the douche has a fall of about one metre and a half. The irrigation begins with the warm current, and before the cold water is turned on pressure is made on the perineum with the vaginal tube, so as to allow all the warm water to run away from the vagina. The same plan is observed before the change from cold to warm, by which means the alteration in the temperature as felt by the patient is always sudden. Each time about two litres of cold and half the quantity of warm water are used. The douche is generally repeated about every hour and a half until labor is active enough to make its continuance probable. Of eighteen women treated by this method exclusively, and four others who were partly so treated, one died of eclampsia twelve hours after delivery, but all the others made a good recovery. The eighteen women who were treated by the douche exclusively had twenty children, of whom fifteen, that is, seventy-five per cent., were alive. These cases required on the average ten douches.

and a half; in half the number three douches and a half were sufficient.—*Centralblatt fur Gynakologie—Medical Record.*

PÆDIATRICS.

TREATMENT OF WHOOPING-COUGH BY ATOMIZATION.

Dr. H. Ernest Schmid, of White Plains, N. Y., in the *Medical Record* of June 13, gives his experience as follows:

I rely entirely, no matter what stage of the disease, on spraying my patients with a solution of carbolic acid, menthol, cocaine, glycerine, and cherry-laurel water, generally in some such proportion:

℞

Acid carbolic	grs. vj.
Menthol, 4 per cent. solution	ʒ iv.
Cocaine, 3 per cent. solution	ʒ iij.
Glycerine	ʒ j.
Aquæ laurocerasi, ad	ʒ ij.

This I direct to be used by the atomizer every three hours—but I mean a thorough use, a brutal one, if necessary. I have the child held forcibly by one or more persons, and disregard any apparent strangling of the little one during a vigorous atomization. The nozzle of the instrument must be directed as far into the mouth of the patient as possible. During the struggling and sputtering and strangling some deep respirations will ere long be made, and the object is accomplished. At first, of course, in most cases, violent paroxysms of coughing may result from the spraying, especially if much force has to be used with the child, but these soon cease and palpable effects are speedily noticed by the parents. The great point is to be able to impress them with the importance of perseverance.

I have seen the whoop arrested by this means after one thorough spraying, coughing without the whoop still going on for a while, and I have been gratified with inducing perfect recovery in one and in two weeks. A few cases in illustration might not be out of place.

A young lady, while on a visit in New York, was attacked by the cough. An excellent physician attended her, but the violence of her attack was terrible, and only excessive doses of anodynes gave her any rest at all. After two weeks she concluded to return home and arrived here perfectly stupefied, with her eyes starting out of their sockets from the dreadful straining accompanying the whoop. I stopped internal medication at once, put her on my spray, and in one week she was well.

I was called to see two children, one three years, the other not quite a year old, brought home by their mother from a visit to some distant place, and sick with whooping-cough. Both whooped badly. After the first spraying the baby ceased whooping altogether, and both were entirely well in two weeks.

A gentleman sent for me to consult me about his two-year-old boy who had the whooping-cough. The family had come from Europe a short time before on a visit merely, and were booked for their return to France two weeks later on. Mother and child had gone to North Carolina, to some relatives, and there the latter was taken with the cough. I expressed the belief that the little one might be cured in time for the sailing of the steamer if it were here. The father at once telegraphed the family to come. It was very hot weather. The little one almost perished on the trip, and I feared he would not live through the first night following his arrival, for bronchitis complicated the pertussis, and a highly febrile condition prevailed. However, he rallied very much by morning, and the spraying was then begun. The struggles of the determined little fellow were very great, but the treatment was carried out mercilessly. In consequence of this I ceased my attendance in eight days, and the family sailed for Europe on the day previously appointed, with a perfectly recovered child.

A short time ago I found in one of my families three children sick with pertussis. The two older ones, after considerable persuasion and coaxing, permitted the use of the spray, but the youngest refused it. The two elder ones recovered in two weeks, while the youngest is going through the slow, protracted course of internal treatment, the mother not being willing to use force.

From my repeatedly successful employment of this treatment, I feel justified in claiming that it promises to be one of the most efficient methods yet devised, provided it be used intelligently, thoroughly, and, if necessary, energetically.

HYGIENE.

RECEIPTS FOR SPECIAL FORMS OF DIET.

Boiled Flour or Flour Boil.—Take one quart of good flour; tie it up in a pudding-bag so tightly as to get a firm, solid mass; put it into a pot of boiling water early in the morning, and let it boil until bed-time. Then

take it out and let it dry. In the morning peel off from the surface and throw away the thin rind of dough, and with a nutmeg grater grate down the hard dry mass into a powder. Of this, from one to three teaspoonfuls may be used, by first rubbing it into a paste with a little milk, then adding to it about a pint of milk, and, finally, by bringing the whole to just the boiling point. It must be given through a nursing-bottle.

An excellent food for children who are costive in their bowels may be made by using bran-meal or unbolted flour instead of the white flour, preparing it as above directed.

Rice Water.—Wash four tablespoonfuls of rice; put it into two quarts of water, which boil down to one, and then add sugar and a little nutmeg. This makes a pleasant drink.

A half-pint or a pint of milk added to this just before taking it from the fire, and allowed to come to a boil, gives a nourishing food suitable for cases of diarrhœa.

Sago, tapioca, barley, and cracked-corn can be prepared in the same manner.

Beef Tea.—Take one pound of juicy, lean beef—say a piece off the shoulder or the round—and mince it up with a sharp knife on a board or a mincing-block. Then put it with its juice into an *earthen* vessel containing a pint of tepid water, and let it stand for two hours. Strain off the liquid through a clean cloth, squeezing well the meat, and add a little salt. Place the whole of the juice thus obtained over the fire, but remove it as soon as it has become browned. Never let it boil; otherwise most of the nutritious matter of the beef will be thrown down as a sediment. Prepared in this way the whole nourishment of the beef is retained in the tea, making a pleasant and palatable food. A little pepper or allspice may be added if preferred.

Mutton Tea.—May be prepared in the same way. It makes an agreeable change when the patient becomes tired of beef tea.

Raw Beef for Children.—Take half a pound of juicy beef, free from any fat; mince it up very finely; then rub it up in a smooth pulp either in a mortar or with an ordinary potato-masher. Spread a little out upon a plate and sprinkle over it some salt, or some sugar if the child prefers. Give it with a teaspoon or upon a buttered slice of stale bread. It makes an excellent food for children with dysentery.— *Annals of Hygiene.*

THE INFLUENCE OF DIET ON THE GROWTH OF HAIR.

Several cases of shedding of hair after influenza has confirmed the opinion of Dr. E. C. Mapother that diet has much to do with the production and with the cure of symptomatic alopecia. Hair contains 5 per cent. of sulphur, and its ash 20 per cent. of silicon and 10 per cent of iron and maganese. Solutions of beef, or rather, part of it, starchy mixtures, and even milk which constitute the diet of patients with influenza and other fevers, cannot supply these elements, and atrophy at the root and falling of hair results. The color and strength of hair in young mammals is not attained so long as milk is their sole food. As to drugs, iron has prompt influence. The foods which most abundantly contain the above-named elements are the various albuminoids and the oat, the ash of that grain yielding 22 per cent of silicon. With care these foods are admissible in the course of febrile diseases, when albumen is the constituent suffering most by the increased metabolism. Dr. Mapother has often found a dietary largely composed of oatmeal and brown bread greatly promote the growth of hair, especially when the baldness was preceded by constipation and sluggish capillary circulation.

Those races of men who consume most meat are the most hirsute. Again, it is well-known in the Zoological Gardens that carnivorous mammals, birds and serpents, keep their hair, feathers, or cuticle in bad condition unless fed with whole animals and the egesta contain the cuticular appendages of their prey in a digested or partly digested state. It is also an old well proven fact that a closely restricted diet, cheese for instance, soon produces in dogs a loss of hair.

In treating fevers a long course of non-nitrogenous diet may promote seborrhœa, which is so often a concomitant of the alopecia. When the special nutritive supply is secure, the depressed condition of the vasomotor and trophic nerves proceeding from the cervical ganglia to the scalp may be stimulated by blisters and liniments at the back of the neck. Dr. Mapother has always found that friction of the scalp with pomades and lotions dislodges many hairs which might otherwise remain, and that cold or tepid baths with salt added and rough rubbing of the rest of the body will flush the capillaries of the affected part more effectually. Besides, when pomades are used, frequent washing becomes necessary, and this is conducive to baldness.—*Brit. Med. Journ.*

MEDICAL CHEMISTRY.

TIMBOINE, A NEW AND INTENSELY POISONOUS ALKALOID.

Dr. Plaff reports from Brazil (*Pharmaceutische Post*) that he has succeeded in isolating from the crushed roots of a leguminous plant called *timbo* by the aborigines of Brazil, a new and exceedingly toxic alkaloid, to which he has given the name timboine. The Indians have long used a decoction of the timbo roots for the purpose of killing fish by poisoning the waters, just as *cocculus indicus* is used in other countries. A small amount of the decoction is said to suffice for a very large volume of water.

TONQUINOL.

Tonquinol, the new artificial musk, occurs as a snow-white crystalline powder with which needle-shaped crystals are interspersed. The odor appears to be due to the presence of a nitro-terpene and nitro-sulpho-xylol. It is soluble in alcohol, water, fats, oils, ether, and chloroform. The alcoholic solution (1 in 50), on considerable dilution with water, is very agreeable in odor, and the perfume is not precipitated. At present tonquinol is sold by the manufacturers at the rate of 1½ pence per grain.

NEWS AND MISCELLANY.

A PARISIAN DINNER.

ANOTHER PLACE THAT NEEDS A PURE FOOD "HEALTHERY."

According to *Le Cosmos* the following is the agreeable *menu* of a Parisian dinner:

As aperitive, a vermouth, which is rendered agreeable by the addition of sulphuric acid.

The diner then attacks his potage of tapioca—made of potato starch to which copper has been added.

His butter is made of calf's fat colored with lead.

His roast, of inferior quality, has been improved with saltpetre; he discovers a few truffles made of pressed clay.

The vinegar of the salad is seasoned with vitriol.

The peas—a little too green—taste of the copper which has given them their color.

Dessert: A chocolate cream; the chocolate is made of glucose, red oxide of mercury and red ochre.

For coffee he is given a mixture made of horse-liver roasted in the oven, black walnut sawdust, and caramel.

His small glass of kirschwasser, which terminates the dinner, contains as high as twenty two centigrammes of prussic acid to the litre.

After such a meal the Parisian has a terrible thirst; he wishes to drink beer, and he drinks it. It is a decoction of poppy-heads, elder, belladonna, datura stramonium, soda, tan-bark and picric acid!

MOTOR NERVES OF THE BLADDER.

Nawrocki (*Pfluger's Archiv*, xlviii, p. 335) has investigated the course of the motor nerves of the bladder of the cat. The animal was slightly curarised, and the effect on the bladder observed when the lower spinal nerves were stimulated. The bladder in this animal receives its motor nerves through two channels: (1) some motor fibres leave the spinal cord in the anterior roots of the fourth and fifth lumbar nerves, pass through the rami communicants into the lumbar part of the sympathetic chain, and then into the superior middle and inferior mesenteric nerves to the inferior mesenteric ganglion, and thence by the hypogastric nerves and hypogastric plexus into the vesical plexus; (2) other fibres pass along the second and third anterior sacral roots into the sacral nerves, and thence to the hypogastric plexus and vesical plexus.—*Brit. Med. Journ.*

A SPANISH FASTING WOMAN.

Dr. Vergara, of Villacienzo, in the province of Burgos, states that there is in that village a married woman, aged 48, who for the last seventeen years has taken no nourishment of any kind; in fact, we are asked to believe that nothing whatever has passed her lips except a small amount of water, which she takes every three or four days. During all that time she has not left her bed for a single moment; she lies there in a state of lethargy, which might be mistaken for death but for occasional slight movements of her body and a feeble moan which she utters when disturbed, as by light falling on her face. There seems to be no question of making the case a paying exhibition, as the husband resolutely shuts his door against mere sightseers.